

WMBX-3011-5252 series

User Manual

Rev.01, Jun. 2011



Statement

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All product specifications are subject to change without prior notice.

Packing List

- ☐ WMBX-3011-5252 x 1
- ☐ 60W DC12V Adapter x 1
- ☐ Power cord (US) x 1
- ☐ Food pad x 4
- ☐ Screws pack x 1
- ☐ Wall mount kit x 1
- ☐ VESA mount kit x 1 (option)
- ☐ Driver CD (Include user's manual) x 1

Ordering Information

STANDARD:

- ☐ WMBX-3011-5252

Mini-BOX with Atom D525 CPU with 1xVGA, 4xCOM, 2xLAN,4xUSB, DDR3 SODIMM max up to 4GB, CF and 2.5" HDD support, mini-PCIe for WLAN expansion(option), wall mount kit, 60W DC12V Adapter, Smart fan design.

OPTION:

- ☐ VESA mount kit for WMBX-3011 series

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Chapter 1 Product Information

This chapter introduces the product features, jumper and connector information.

1.1 General Description

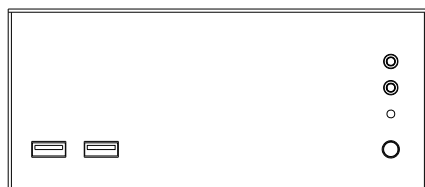
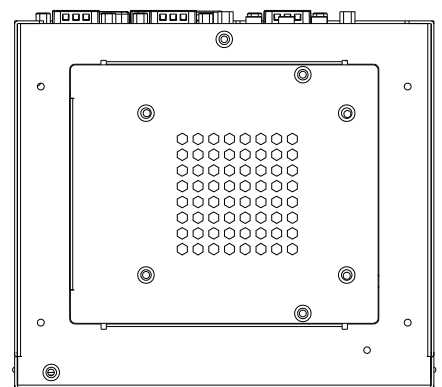
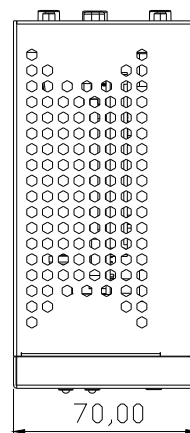
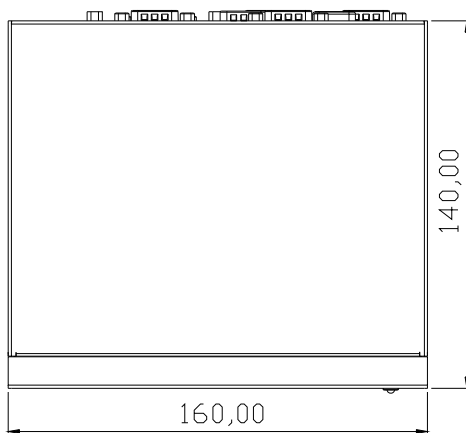
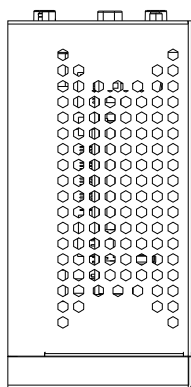
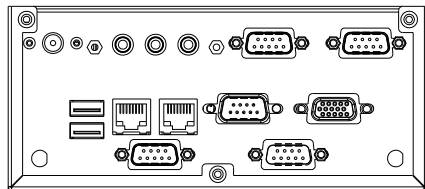
WMBX-3011-5252 series is a Mini BOX PC system that can support Atom N270 processors. The **WMBX-3011-5252 series** supports Windows® 2000, Windows® XP, Windows® XP embedded, Windows® 7, which is suitable for the most endurable operation.

1.2 Features

Construction	Heave duty steel
CPU	Intel Atom D525 Dual core 1.8GHz processor onboard
System memory	1 x 204-pin DDR3 800 SO DIMM SDRAM, max. up to 4GB
Chipset	Intel D525 + ICH8M
BIOS	Award 16MB SPI
System I/O	Front I/O: 2 x USB Rear I/O: 2 x USB, 2 x LAN, 1 x VGA, 4 x COM(4 x RS-232, 1 x RS-232/422/485); All COM with +5V/+12V/RI support by jumper selector 1 x Audio(Mic-in, Audio-out, Line-in), 1 x WLAN (optional)
Watch dog timer	Interval: Programmable 1~255 sec.
Storage support	1 x CF and 1 x 2.5" HDD
Expansion slot	1 x mini-PCle
System Indicators	1 x Power LED, 1 x HDD LED
System controls	1 x Power on switch, 1 x Reset switch
Mounting Kit	Wall mount kit VESA mount kit (option)
Power Supply	AC 60W adapter, Input: AC 100~240V~2A 50-60Hz, Output: DC12V@5A
Operating Temperature	0°C~50°C (32°F~140°F)
Storage temperature	-20°C~80°C (-68°F~176°F)
Relative Humidity	0%~90% (non-condensing)
Dimensions	160mm(W) x 140mm(D) x 70mm(H) 6.3"(W) x 5.5"(D) x 2.75"(H)
Weight	Gross: 2.6Kg/5.72Lb Net: 2.0Kg/4.4Lb
Standard Color	Black

1.3 Dimensions

The following diagrams show you dimensions and outlines of **WMBX-3011-5252** series.



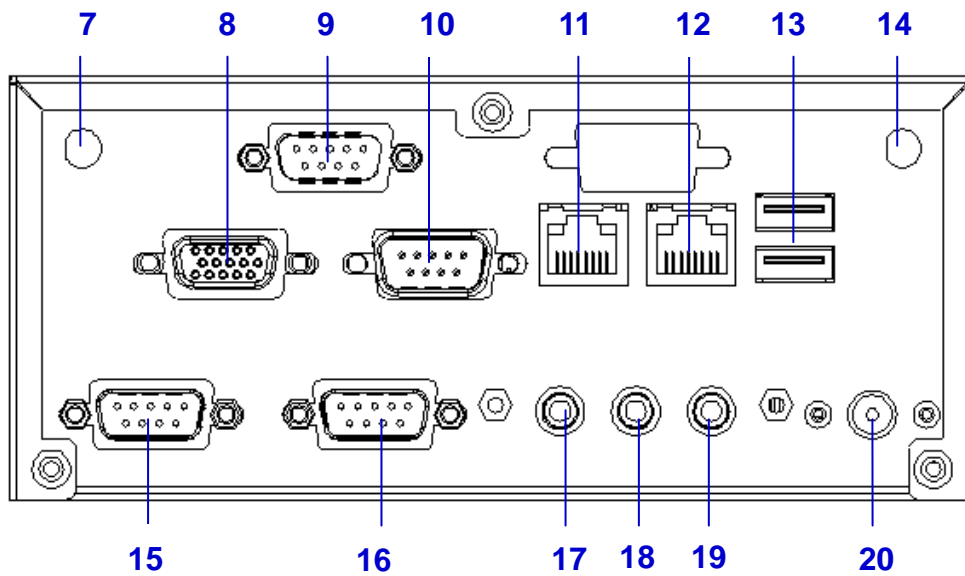
1.4 I/O Outlets

FRONT



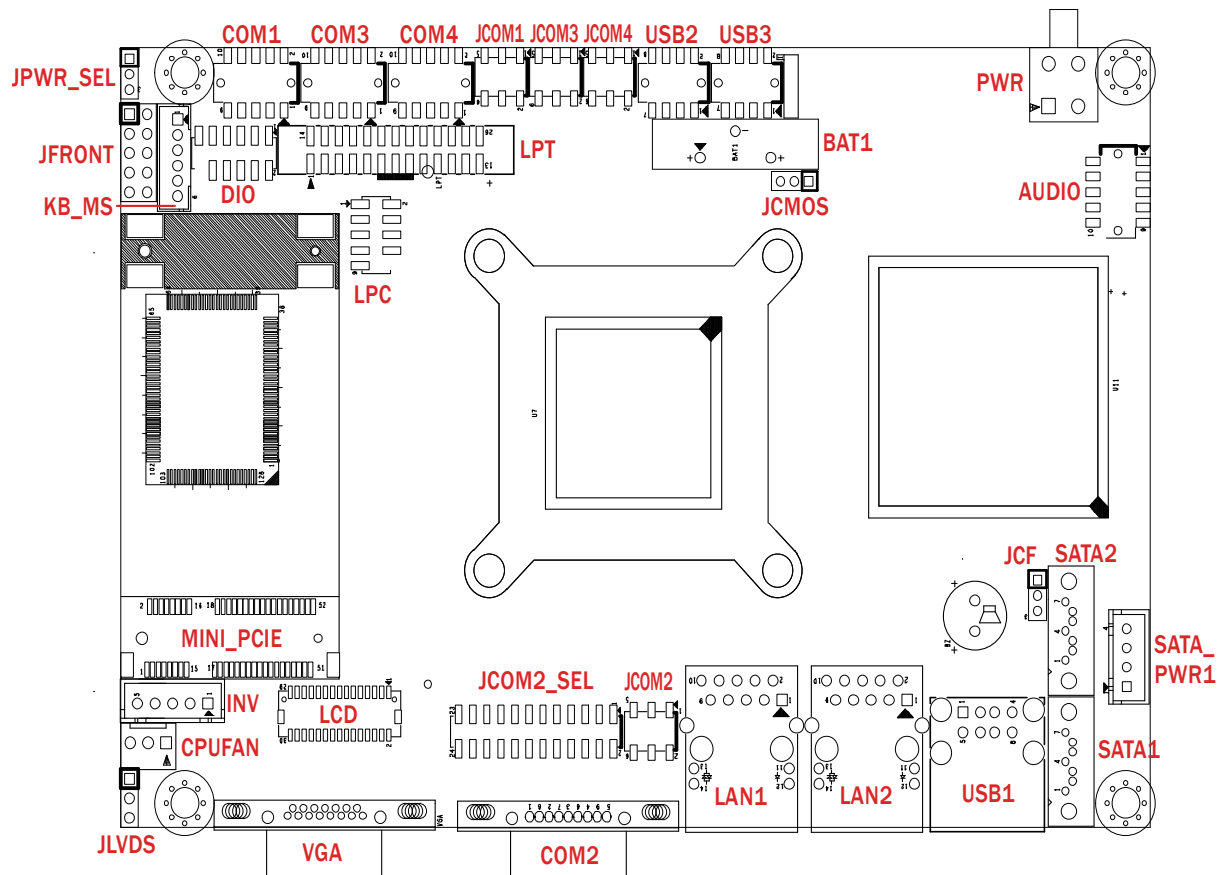
1. USB
2. USB
3. Power on button
4. Power status LED
5. HDD status LED
6. Reset button

BACK



- 7. Antenna hole
- 8. VGA Port
- 9. COM Port (COM1)
- 10. COM Port (COM2)
- 11. LAN Port (LAN1)
- 12. LAN Port (LAN2)
- 13. USB Port (2 port)
- 14. Antenna hole
- 15. COM Port (COM3)
- 16. COM Port (COM4)
- 17. Audio (Line in)
- 18. Audio (Mic in)
- 19. Audio (Line out)
- 20. DC12V input

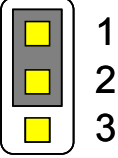
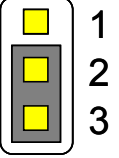
1.5 M/B PCB Layout



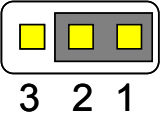
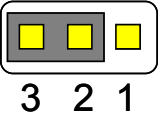
1.6 Jumper Setting

WMBX-3011-5252 series has a number of jumpers inside the chassis that allow you to configure your system to suit your application. The table below lists the functions of the various jumpers.

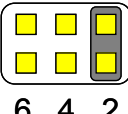
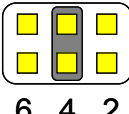
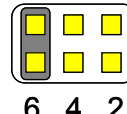
JCF : CF Select (2.0mm)

Pin No.	1-2	2-3
Function	Master	Slave (Default)
Jumper Setting		

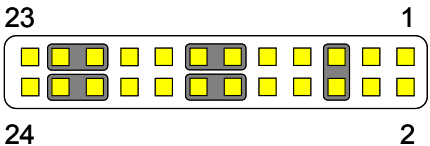
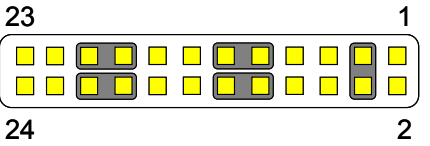
JCMOS : CMOS Clear (2.0mm)

Pin No.	1-2	2-3
Function	Normal Operation (Default)	Clear CMOS Contents
Jumper Setting		

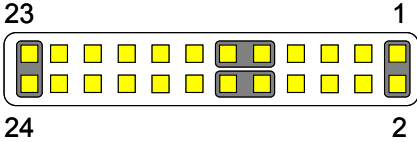
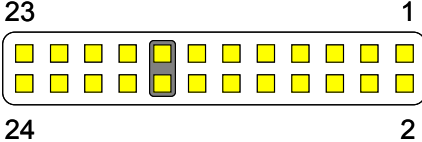
JCOM1 / JCOM2 / JCOM3 / JCOM4: (5V/12V/RI) Select (2.54mm)

Pin No.	1-2	3-4	5-6
Function	+5V	Modem Ring In (Default)	+12V
Jumper Setting			

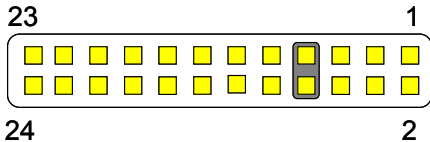
JCOM2_SEL : COM2 (RS-232/RS-422/RS-485) Select (1/3) (2.0mm)

Pin No.	5-6, 11-13, 12-14, 19-21, 20-22	3-4, 9-11, 10-12, 17-19, 18-20
Function	RS-232 (Default)	RS-422
Jumper Setting		

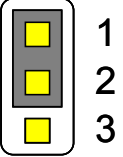
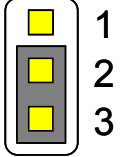
JCOM2_SEL : COM2 (RS-232/RS-422/RS-485) Select (2/3) (2.0mm)

Pin No.	1-2, 9-11, 10-12, 23-24	15-16
Function	RS-485	RS-422 RX 100Ω Termination
Jumper Setting		

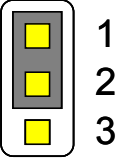
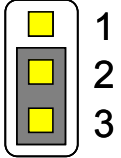
JCOM2_SEL : COM2 (RS-232/RS-422/RS-485) Select (3/3) (2.0mm)

Pin No.	7-8
Function	RS-422 TXD Pair 100Ω (Not recommended)/ RS-485 Data Pair Termination
Jumper Setting	

JLVDS : LCD Power (+3.3V / +5V) Select

Pin No.	1-2	2-3
Function	LCD Power +3.3V (Default)	LCD Power +5V
Jumper Setting		

JPWR_SEL : AT / ATX Mode Select

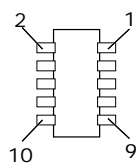
Pin No.	1-2	2-3
Function	AT Mode	ATX Mode (Default)
Jumper Setting		

1.7 Connector Function List

Connector	Function	Note
AUDIO	Audio Amplifier Output with Wafer connector	
COM1, 3, 4	Serial Port with Box-header	
COM2	Serial Port with DSUB-9P connector	
CPUFAN	CPUFAN 3-pin connector	
DIO	Digital I/O with Pin-header	
INV	Inverter with Box-header	
JFRONT	Front Panel with Pin-header	
KB_MS	Keyboard and mouse connector	
LAN1, 2	LAN connector	
LCD	LVDS Panel Signal with Box-header	
LPC	Debug Port with Pin-header	
LPT	Parallel Port with Box-header	
MINI-PCIE	Mini PCI Express connector	
PWR	ATX 2x2 connector	
SATA1, SATA2	SATA connector	
SATA_PWR1,	SATA Power with Box-header	
USB1	USB0/1 Port connector	
USB2	USB2/3 connector with Pin-header	
USB3	USB4/5 connector with Pin-header	
VGA	VGA connector	

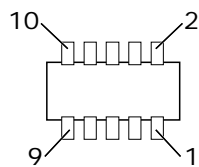
1.8 Internal Connector Pin Define

AUDIO : Audio Amplifier Output with Wafer connector (2.0 mm)



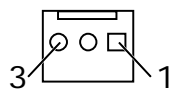
Pin No.	Signal	Pin No.	Signal
1	Line-In Right	2	Line-In Left
3	Line-In Jack Detect	4	MIC Jack Detect
5	MIC-In Right	6	MIC-In Left
7	Line-Out Jack Detect	8	Audio Ground
9	Line-Out Right	10	Line-Out Left

COM1, 3, 4 : Serial Port with Box-header (2.0 mm)



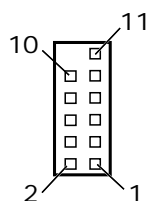
Pin No.	Signal	Pin No.	Signal
1	DCD	2	DSR
3	RXD	4	RTS
5	TXD	6	CTS
7	DTR	8,10	RI/+5V/+12V
9	Ground		

CPUFAN: 3Pin FAN connector

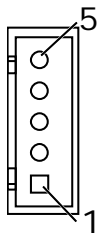


Pin No.	Signal
1	Ground
2	Fan Power (+12V)
3	Speed Sense

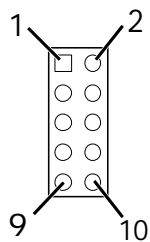
DIO: Digital I/O with Pin-header (2.00mm)



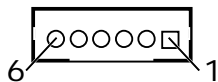
Pin No.	Signal	Pin No.	Signal
1	DIO-Out0	2	DIO-In0
3	DIO-Out1	4	DIO-In1
5	DIO-Out2	6	DIO-In2
7	DIO-Out3	8	DIO-In3
9	+12V	10	+5V
11	Ground		

INV : Inverter with Box-header (2.50 mm)

Pin No.	Signal
1	+12V
2	+12V
3	Ground
4	Inverter Brightness control
5	Inverter Enable

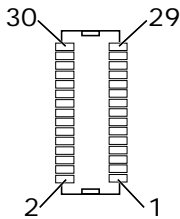
JFRONT : Front Panel Connector with Pin-header (2.54mm)

Pin No.	Signal	Pin No.	Signal
1	Power LED + (+5V, 470Ω)	2	Power LED – (Ground)
3	HDD LED + (470Ω)	4	HDD LED -
5	Suspend LED + (+V5S, 470Ω)	6	Suspend LED -
7	Reset Switch +	8	Reset Switch – (Ground)
9	Power Switch +	10	Power Switch – (Ground)

KB MS : Keyboard and mouse connector (2.00 mm)

Pin No.	Signal
1	PS2 Power (+5V)
2	PS2 Mouse Data
3	PS2 Mouse Clock
4	PS2 Keyboard Data
5	PS2 Keyboard Clock
6	PS2 Ground

LCD : LVDS Panel Signal with Box-header (1.0 mm)

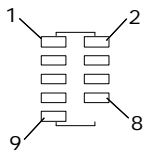
	Pin No.	Signal	Pin No.	Signal
	1	Ground	2	Ground
	3	NC	4	NC
	5	LA_CLK+	6	LA_CLK-
	7	LA_DC2+	8	LA_DC2-
	9	LA_DC1+	10	LA_DC1-
	11	LA_DC0+	12	LA_DC0-
	13	Ground	14	Ground
	15	L_DC3+	16	L_DC3-
	17	L_CLK+	18	L_CLK-
	19	L_DC2+	20	L_DC2-
	21	L_DC1+	22	L_DC1-
	23	L_DC0+	24	L_DC0-
	25	Ground	26	Ground
	27	LVDS Power	28	LVDS Power
	29	LVDS Power	30	LVDS Power

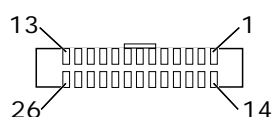
Note1 : LVDS Power = +5V or +3.3V (Default)

Note2 : Pin5-Pin12 of LVDS 18bit for Pineview CPU

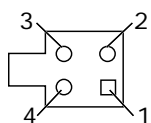
Note3 : Pin15-Pin23 of LVDS 18/24bit for Chrontel CH7036 (Default)

LPC: Debug Port with Pin-header (2.0mm)

	Pin No.	Signal	Pin No.	Signal
	1	LAD0	2	LPC Reset#
	3	LAD1	4	LFRAME#
	5	LAD2	6	+3.3V
	7	LAD3	8	Ground
	9	LPC33MHz	10	NC

LPT : Parallel Port with Box-header (2.0 mm)

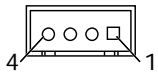
Pin No.	Signal	Pin No.	Signal
1	Strobe#	14	Auto Form Feed#
2	Data 0	15	Error#
3	Data 1	16	Initialization#
4	Data 2	17	Printer Select IN#
5	Data 3	18	Ground
6	Data 4	19	Ground
7	Data 5	20	Ground
8	Data 6	21	Ground
9	Data 7	22	Ground
10	Acknowledge#	23	Ground
11	Busy	24	Ground
12	Paper Empty	25	Ground
13	Printer Select	26	Ground

PWR: ATX 2x2 +12V Input (4.20mm)

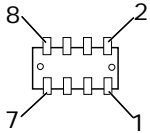
Pin No.	Signal	Pin No.	Signal
1	Ground	2	Ground
3	+12V	4	+12V

SATA1, SATA2: SATA Connector (2.50mm)

Pin No.	Signal
1	Ground
2	TX+
3	TX-
4	Ground 1
5	RX-
6	RX+
7	Ground 2

SATA PWR1: SATA Power with Box-header (2.50mm)

Pin No.	Signal
1	+5V
2	Ground
3	Ground
4	+12V

USB2/3: USB connector with Pin header (2.0 mm)

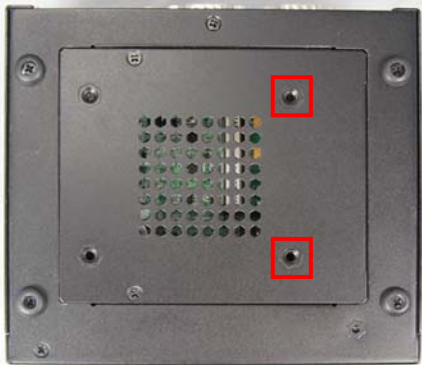
Pin No.	Signal	Pin No.	Signal
1	USB Power (+5V)	2	USB Power (+5V)
3	USB DATA-	4	USB DATA-
5	USB DATA+	6	USB DATA+
7	Ground	8	Ground

Chapter 2 Hardware Installation

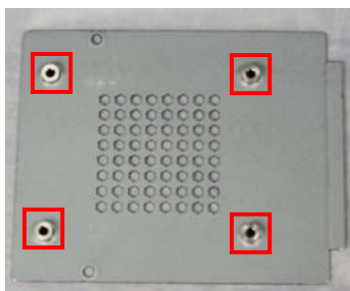
WMBX-3011-5252 series are convenient for various hardware configurations, such as Memory Module, HDD, Compact Flash. The chapter 2 will show you how to install the hardware. The information is shown as bellow:

2.1 Install the Memory Module

Step 1: Remove the cover screws at the bottom (2pcs).



Step 2: Add 2.5" SATA HDD screws (4pcs).



Step 3: Connect SATA + Power cable.



2.2 Install the Compact Flash Card

Insert Compact Flash Card.



2.3 Install the Memory Module

Insert the memory module.



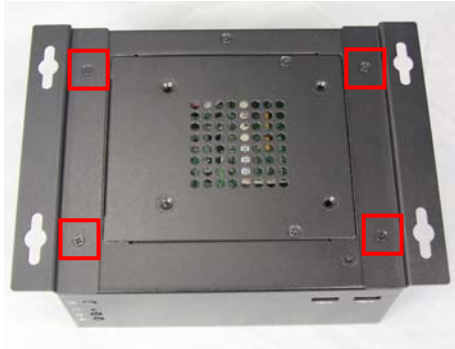
2.4 Install the mini-PCIe Expansion Module

Insert the mini-PCIe module (full size only).



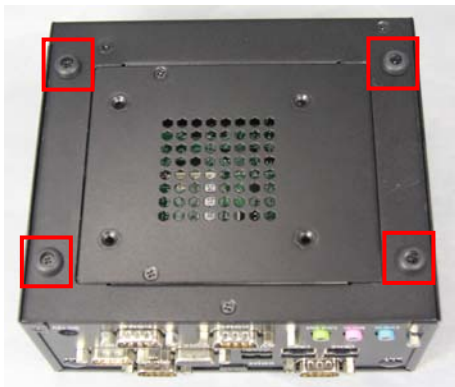
2.5 Installing the Wall Mount Kit

Connect the wall mount kit screws (4pcs).



2.6 Install the Foot Pad

Connect the foot pad screws (4pcs).

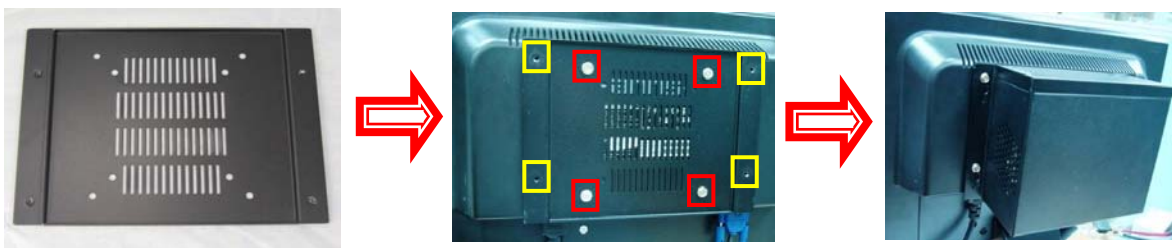


Note: Wall mount kit and foot pad only can select one

2.7 Install VESA Mount Kit

Connect VESA mount kit screws (4pcs).

Connector Wall mount kit screws on VESA mount kit (4pcs).



Chapter 3 BIOS Setup

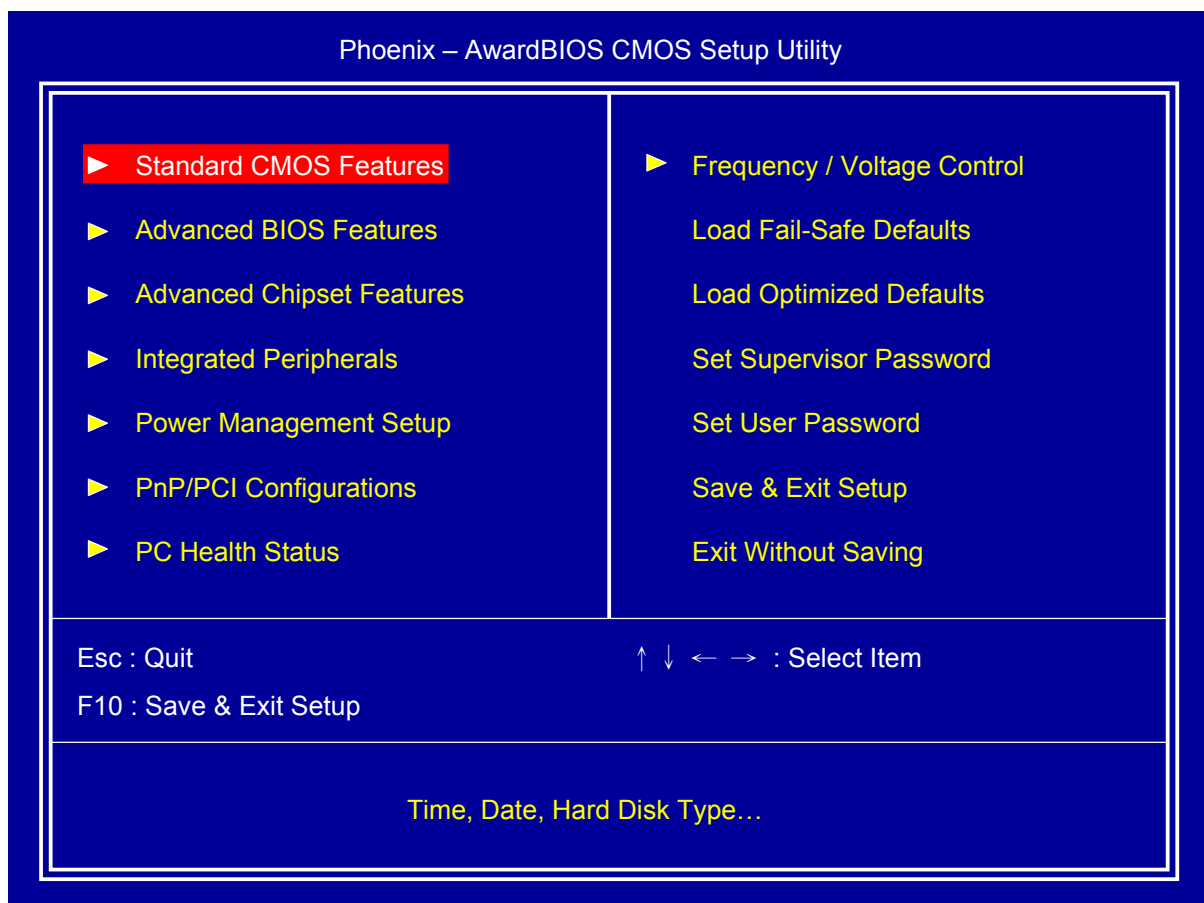
This chapter introduces BIOS setup information.

Power on or reboot the system board, when screen appears message as “Press DEL to enter SETUP“. Press key to run BIOS SETUP Utility.

Note: The BIOS configuration for reference only, it may subject to change without prior notice.

3.1 Main Menu

Please use arrow keys to select item, then press <Enter> key to accept or enter the sub-menu.



3.2 Standard CMOS Features

Phoenix – AwardBIOS CMOS Setup Utility
Standard CMOS Features

		Item Help
Date (mm:dd:yy)	Thu. Apr. 14 2011	
Time (hh:mm:ss)	11 : 28 : 10	
▶ IDE Channel 0 Master	[None]	Menu Level ▶ Change the day, month, year and century
▶ IDE Channel 0 Slave	[None]	
▶ IDE Channel 2 Master	[None]	
▶ IDE Channel 2 Slave	[None]	
▶ IDE Channel 3 Master	[None]	
Video	[EGA / VGA]	
Halt On	[All , But Keyboard]	
Base Memory	639K	
Extended Memory	1037312K	
Total Memory	1038336K	

↑↓→← :Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1: General Help
 F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

☐ **Date**

Set system date.

☐ **Time**

Set system time.

☐ **IDE Channel 0 Master/Slave**

Press <Enter> for IDE device automatic detection.

☐ **IDE Channel 2 Master/Slave**

Press <Enter> for IDE device automatic detection.

☐ **IDE Channel 3 Master**

Press <Enter> for IDE device automatic detection.

☐ **Video**

Select Video device type.

☐ **Halt on**

Select stop procedure or ignore when error detected during POST (Power On Self Test).

3.3 Advanced BIOS Features

Phoenix – AwardBIOS CMOS Setup Utility
Advanced BIOS Features

<ul style="list-style-type: none"> ▶ CPU Feature [Press Enter] ▶ Hard Disk Boot Priority [Press Enter] Virus Warning [Disabled] CPU L3 Cache [Enabled] Hyper-Threading Technology [Enabled] Quick Power On Self Test [Enabled] First Boot Device [CDROM] Second Boot Device [Hard Disk] Third Boot Device [USB-FDD] Boot Other Device [Enabled] Boot Up NumLock Status [On] Gate A20 Option [Fast] Typematic Rate Setting [Disabled] X Typematic Rate (Chars/Sec) 6 X Typematic Delay (Msec) 250 Security Option [Setup] MPS Version Control For OS [1.4] Os Select For DRAM > 64MB [Non-OS2] Report No FDD For WIN 95 [No] Small Logo(EPA) Show [Disabled] 	<div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;">Item Help</p> <hr/> <p>Menu Level ▶</p> </div>
--	--

↑↓→← :Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1: General Help
 F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

☐ CPU Feature

Press <Enter> to select CPU parameter.

☐ Hard Disk Boot Priority

Press <Enter> to select Hard Disk boot device priority.

☐ Virus Warning

Select "Virus Warning"
Enabled/Disabled.

☐ CPU L3 Cache

Select "CPU L3 Cache"
Enabled/Disabled.

☐ Hyper-Threading Technology

Select "Hyper-Threading Technology"
Enabled/Disabled

☐ Quick Power On Self Test

Select "Quick Power On Self Test"
Enabled/Disabled.

☐ First/Second/Third Boot Device

Select boot device priority.

☐ Boot Other Device

Select "Boot Other Device"
Enabled/Disabled.

☐ **Boot Up NumLock Status**

Select <NumLock> key ON/Off when system boot up.

☐ **Gate A20 Option**

Select Gate A20 controlled by Keyboard controller (Normal) or Port 92 (Fast).

☐ **Typematic Rate Setting**

Select "Typematic Rate Setting" Enabled to set,

Typematic Rate (Chars/Sec): Number of characters repeated in one second.

Typematic Delay (Msec): When holding one key, set the time between the first and second character displayed.

☐ **Security Option**

Select security mode,

Setup: Require password to permit BIOS setup utility.

System: Require password to permit boot-up and BIOS setup utility.

☐ **MPS Version Control For OS**

Select MPS (Multiprocessor Specification) Version 1.4 to added extended configuration tables to improve support for multiple PCI bus configurations and improve future expandability. It is also required for a secondary PCI bus to work without the need for a bridge. Select Version 1.1 for older Operating Systems.

☐ **OS Select For DRAM > 64M**

Select "OS2" only if you are running older version of IBM OS/2 Operating System with greater than 64MB of RAM on the system. Otherwise select "Non-OS/2" setting.

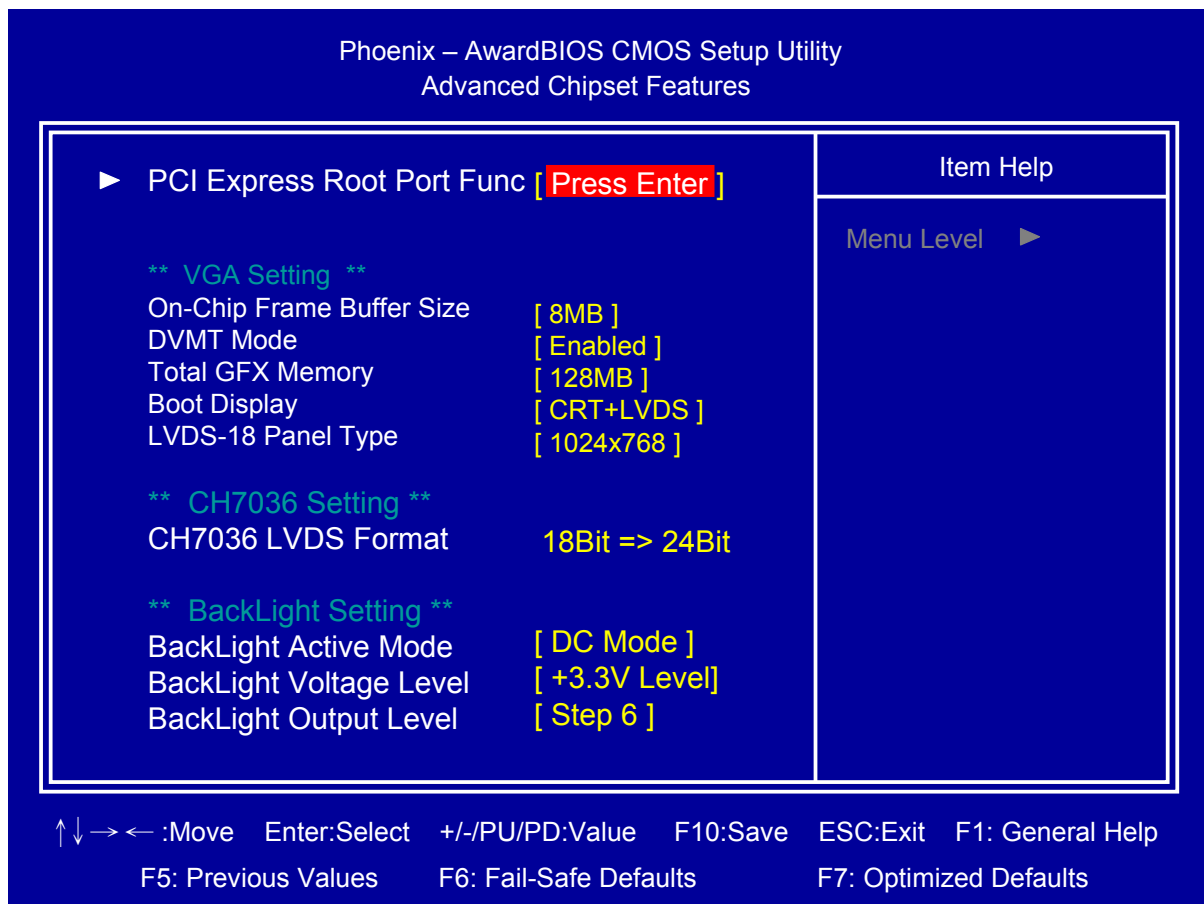
☐ **Report No FDD For WIN 95**

If running Windows 95/98 without floppy diskdrive, select "Enabled" to release IRQ6. This is required to pass Windows 95/98's SCT test, If select "Disabled", BIOS will not report missing floppy drive to Win95/98.

☐ **Small Logo(EPA) Show**

Select EPA (Environmental Protection Agency) Energy Star logo appears during the system boot-up process.

3.4 Advanced Chipset Features



☐ PCI Express Root Port Func

Press <Enter> to setting PCI Express function

☐ On-Chip Frame Buffer Size

Select share system memory 1MB or 8MB.

☐ DVMT Mode

DVMT (Dynamic Video Memory Technology) allowing the system to dynamically allocate memory resources according to the demands of the system at any point in time, that improve efficiency of the memory allocated to either system or graphics processor.

☐ Total GFX Memory

Select Total GFX Memory: 128MB, 256MB, or MAX. (For Win XP, the MAX Value is base on system memory size, 512MB for 1GB DRAM, 768MB for 1.5GB to 2GB, 1GB fro above 2GB.)

☐ **Boot Display**

Select boot display device type: CRT, LVDS, or CRT+LVDS.

☐ **LVDS-18 Panel Type**

Select LCD 18 bit resolution

☐ **CH7036 LVDS Format**

Select CH7036 LVDS Format type: 18Bit→18Bit or 18Bit→24Bit.

☐ **BackLight Active Mode**

Select BackLight Active Mode: PWN Mode or DC Mode.

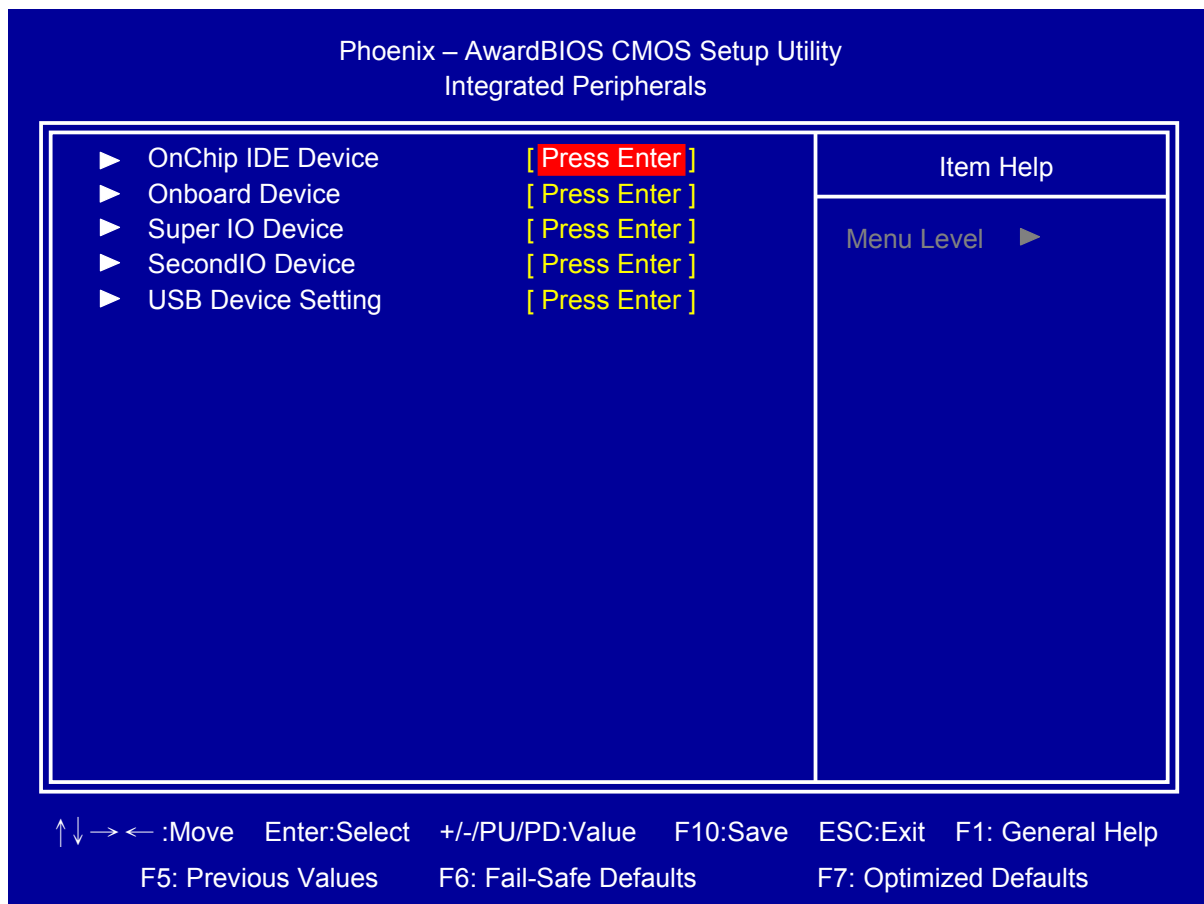
☐ **BackLight Voltage Mode**

Select BackLight Voltage Mode: +5.0V Level or +3.3V Level.

☐ **BackLight Output Mode**

Select BackLight Output Mode: Step1 to Step 10.

3.5 Integrated Peripherals



☐ OnChip IDE Device

Press <Enter> to set IDE and SATA device configuration.

Phoenix – AwardBIOS CMOS Setup Utility	
OnChip IDE Device	
IDE HDD Block Mode	[Enabled]
IDE DMA transfer access	[Enabled]
*** On-Chip Serial ATA Setting ***	
SATA Mode	[IDE]
On-Chip Serial ATA	[Enhanced Mode]
*** On-Chip PATA Setting ***	
On-Chip Primary PCI IDE	[Enabled]
IDE Primary Master PIO	[Auto]
IDE Primary Slave PIO	[Auto]
IDE Primary Master UDMA	[Auto]
IDE Primary Slave UDMA	[Auto]
On-chip Secondary PCI IDE	[Enabled]
IDE Secondary Master PIO	[Auto]
IDE Secondary Slave PIO	[Auto]
IDE Secondary Master UDMA	[Auto]
IDE Secondary Slave UDMA	[Auto]
Item Help	
Menu Level ►	
If your IDE hard drive supports block mode select Enabled for automatic detection of the optimal number of block read/writes per sector the drive can support.	

↑↓→← :Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

☐ IDE HDD Block Mode

Block mode is also called block transfer, multiple commands, or multiple sector read/write.

☐ IDE DMA transfer access

UDMA (Ultra DMA) is a DMA data transfer protocol that utilizes ATA commands and the ATA bus to allow DMA commands to transfer data at a maximum burst rate of 33 MB/s.

☐ On-Chip Serial ATA Setting

There have three selections in “SATA mode”:

- IDE: Default
- RAID: Set this item to enable SATA AHCI function for WinXP-SPI+IAA driver support AHCI mode.
- AHCI: Enable SATA RAID function

If you select IDE, there will show “On chip Serial ATA” for you to set. There have five selections in “On chip Serial ATA”:

- Disabled: Disable on-board serial ATA function.
- Auto: Auto detect Serial ATA device.
- Combined Mode: SATA and PATA drives are auto-detected and placed in Legacy mode.
- Enhanced Mode: Default, SATA and PATA drives are auto-detected and placed in Native mode.
- SATA Only: Serial ATA function only.

☐ **On-Chip Primary PCI IDE**

☐ **On-Chip Secondary PCI IDE**

The chipset contains a PCI IDE interface with support for two IDE channels. Select Enabled to activate the IDE interface. Select Disabled to deactivate this interface, if you install a primary and/or secondary add-in IDE interface.

☐ **IDE Primary Master PIO**

☐ **IDE Primary Slave PIO**

☐ **Secondary Master PIO**

☐ **Secondary Slave PIO**

The four IDE PIO (Programmed Input/Output) fields let you set a PIOmode (0-4) for each of the four IDE devices that the onboard IDE interface supports. Modes 0 through 4 provide successively increased performance. In Auto mode, the system automatically determines the best mode for each device.

☐ **IDE Primary Master UDMA**

☐ **IDE Primary Slave UDMA**

☐ **IDE Secondary Master UDMA**

☐ **IDE Secondary Slave UDMA**

UDMA (Ultra DMA) is a DMA data transfer protocol that utilizes ATA commands and the ATA bus to allow DMA commands to transfer data at a maximum burst rate of 33 MB/s. When you select Auto in the four IDE UDMA fields (for each of up to four IDE devices that the internal PCI IDE interface supports), the system automatically determines the optimal data transfer rate for each IDE device.

☐ Onboard Device

Phoenix – AwardBIOS CMOS Setup Utility		
Onboard Device		
Onboard Lan1	[Enabled]	Item Help
Onboard Lan2	[Enabled]	
ADO Control	[Enabled]	
Onboard Lan Boot ROM	[Disabled]	

Menu Level ►

↑↓→← :Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

☐ Onboard Lan1

Enable/Disable onboard Lan1.

☐ ADO Control

Enable/Disable Audio control.

☐ Chrontel CH7036

Select Enable or Disabled Chrontel CH7036.

☐ Onboard Lan Boot ROM

Decide whether to invoke the boot ROM of the onboard LAN chip

☐ Super IO Device

Press <Enter> to select Serial, Parallel and “I” configuration.

Phoenix – AwardBIOS CMOS Setup Utility	
Super IO Device	
Onboard Serial Port 1	[3F8/IRQ4]
Onboard Serial Port 2	[2F8/IRQ3]
UART Mode Select	[Normal]
x RxD, TxD Active	Hi, Lo
x IR Transmission Delay	Enabled
x UR2 Duplex Mode	Half
x Use IR Pins	IR-Rx2Tx2
Onboard Parallel Port	[378/IRQ7]
Parallel Port Mode	[SPP]
x EPP Mode Select	EPP1.7
x EPC Mode Use DMA	3
Watchdog Timer Select	[Disabled]

Item Help

Menu Level ►

↑↓→← :Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

☐ Onboard Serial Port 1

Select serial port 1 address: Disabled, 3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3, or Auto.

☐ Onboard Serial Port 2

Select serial port 2 address: Disabled, 3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3, or Auto.

☐ UART Mode Select

Select UART Mode: IrDA, ASKIR, or Normal.

☐ Onboard Parallel Port

Select onblard parallel port: Disabled, 378/IRQ7, 278/IRQ5, or 3BC/IRQ7.

☐ **Parallel Port Mode**

Select Parallel Port Mode: SPP, EPP, ECP, ECP+EPP, or Normal.

☐ **Watch Dog Timer Select**

Select Watch dog Disabled or set timer value: 10sec, 20sec, 30sec, 40sec, 1 min, 2min, or 4min.

☐ **Second IO Device**

Phoenix – AwardBIOS CMOS Setup Utility	
Second IO Device	
Onboard Serial Port 3	[3E8h]
Serial Port 3 Use IRQ	[IRQ10]
Oboard Serial Port 4	[2E8h]
Serial Port 4 Use IRQ	[IRQ10]
Item Help	
Menu Level ▶	

↑↓→← :Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

☐ **Onboard Serial Port 3/4/5/6**

Select serial port address.

☐ **Serial Port 3/4/5/6 Use IRQ**

Select serial port IRQ. Support IRQ sharing mode.

☐ USB Device Setting

Press <Enter> to select USB device configuration.

Phoenix – AwardBIOS CMOS Setup Utility	
USB Device Setting	
USB 1.0 Controller	[Enabled]
USB 2.0 Controller	[Enabled]
USB Operation Mode	[High Speed]
USB Keyboard Function	[Enabled]
USB Mouse Function	[Enabled]
USB Storage Function	[Enabled]
*** USB Mass Storage Device Boot Setting ***	
Item Help	
Menu Level ►	
[Enable] or [Disable]	
Universal Host	
Controller Interface	
for Universal Serial	
Bus.	

↑↓→← :Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1: General Help
F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

3.6 Power Management Setup

Phoenix – AwardBIOS CMOS Setup Utility
Power Management Setup

<p>ACPI Function [Enabled]</p> <p>ACPI Suspend Type [S1(POS)]</p> <p>Soft-Off by PWR-BTTN [Instant-Off]</p> <p>Power On by Ring [Disabled]</p> <p>Resume by Alarm [Disabled]</p> <p>x Date (of Month) Alarm 0</p> <p>x Time (hh:mm:ss) Alarm 0 : 0 : 0</p> <p>► PCI Express PM Function [Press Enter]</p>	<p style="text-align: center;">Item Help</p> <hr/> <p>Menu Level ►</p>
---	--

↑↓→← : Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
 F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults

☐ **ACPI Function**

Select ACPI (Advanced Configuration and Power Management) Enabled/Disabled.

☐ **ACPI Suspend Type**

Select S1 (POS) type.

☐ **Soft-Off by PWR_BTTN**

Select power button function,

Instant-off: Press power button will power off instantly.

Delay 4 Sec: Press power button 4 second to power off.

☐ **Power On by Ring**

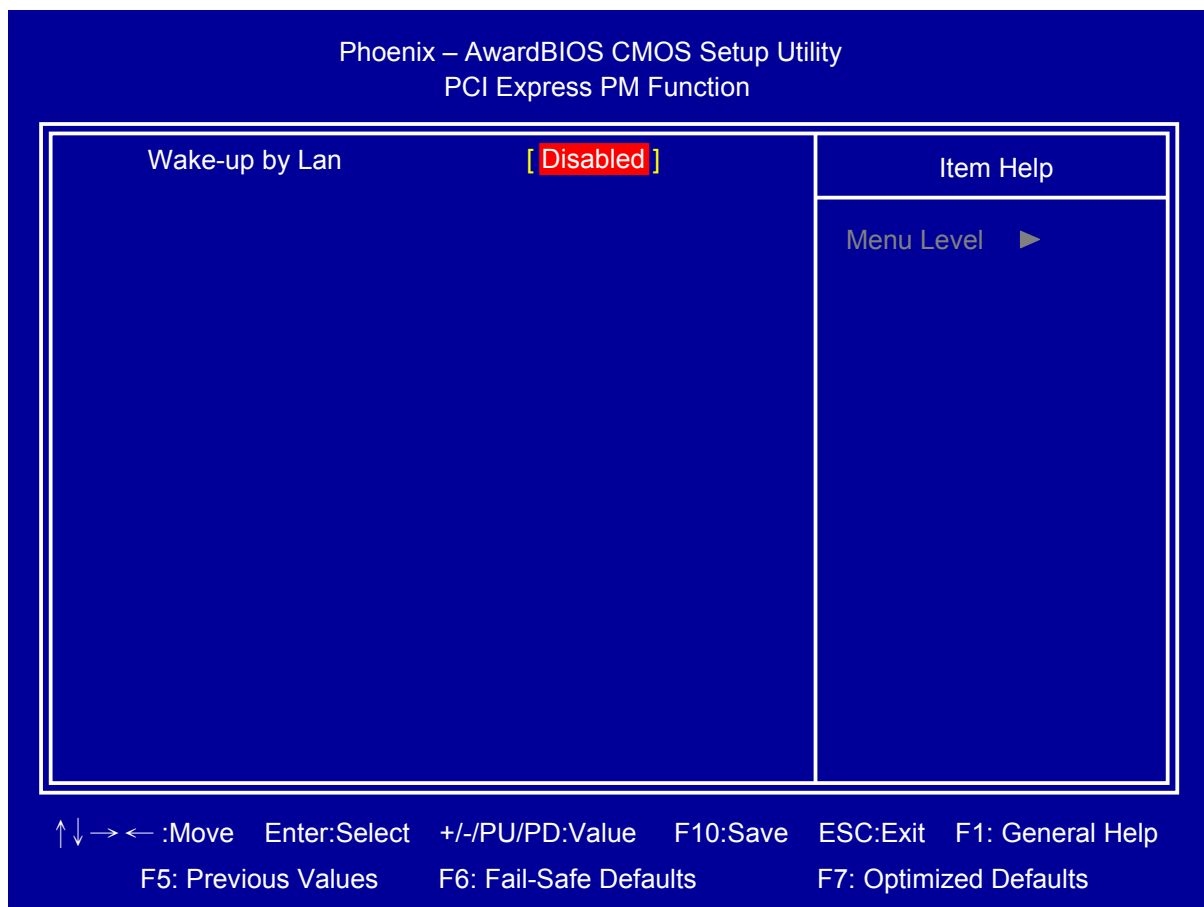
Select Power on by Ring Indicator signal from Modem.

☐ **Resume by Alarm**

Set date and time to power on system from soft-off state.

☐ **PCI Express PM Function**

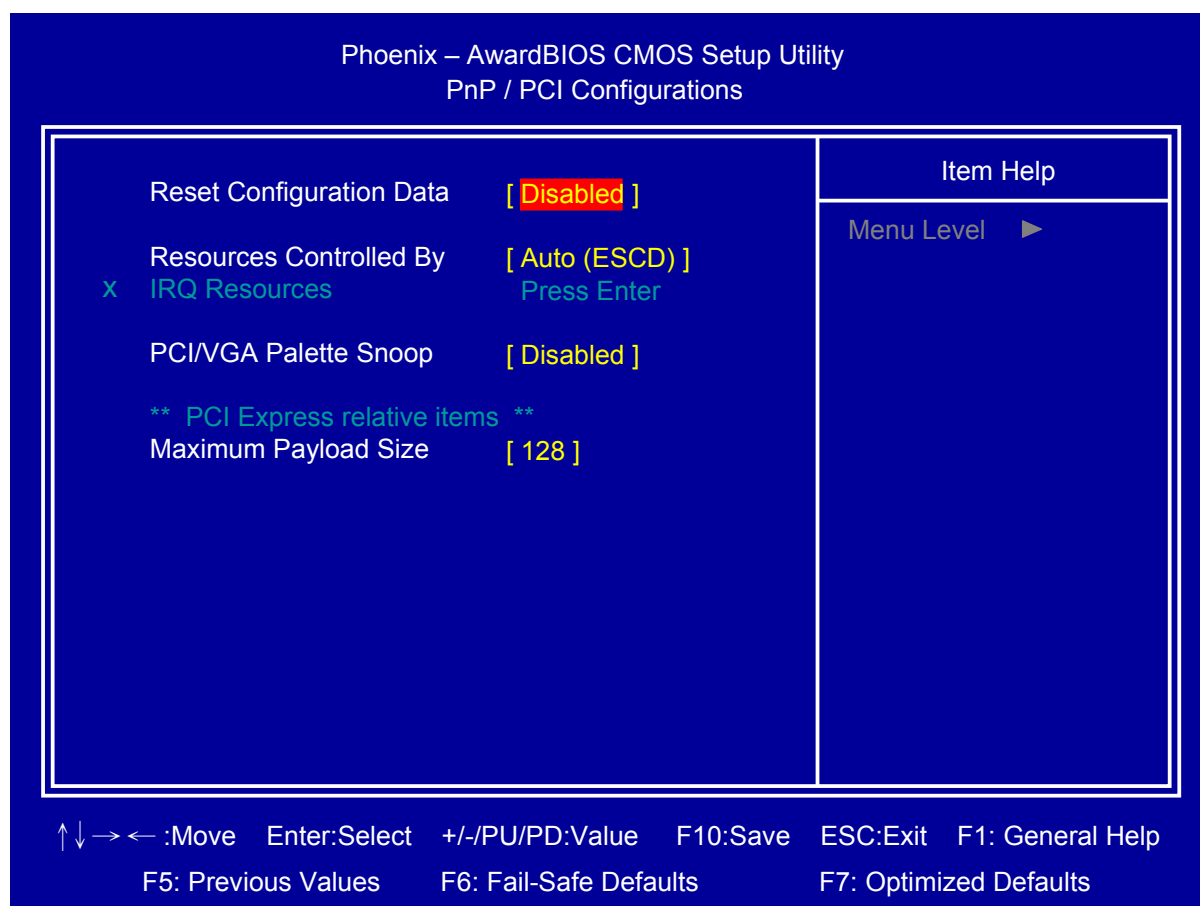
Press <Enter> to select “Wake-up by LAN” Enabled/Disabled.



☐ **Wake-up by Lan**

Select wake-up by Lan Enabled/Disabled.

3.7 PnP/PCI Configurations



☐ Init Display First

Select initial display by PCI or Onboard device.

☐ Reset Configuration Data

Select Enabled to reset Extended System Configuration Data (ESCD) when you exit BIOS setup utility, if you have installed new add-on card and the system reconfiguration has caused such a serious conflict that the OS cannot boot.

☐ Resources Controlled By

BIOS can automatically configure all the boot and Plug and Play compatible devices.

If you choose Auto, you cannot select IRQ DMA and memory base address fields, since BIOS automatically assigns them.

☐ PCI/VGA Palette Snoop

Select PCI/VGA Palette Snoop Enabled/Disabled.

☐ Maximum Payload Size

Set maximum TLP payload size for the PCI Express devices. The unit is byte.

3.8 PC Health Status

Phoenix – AwardBIOS CMOS Setup Utility		
PC Health Status		
Shutdown Temperature	[Disabled]	Item Help Menu Level ►
CPU Warning Temperature	[Disabled]	
Current CPU Temperature	44°C/ 112°F	
Current SYStem Temperature	37°C/ 98°F	
CPU Fan Speed	8437 RPM	
Vcore	1.13 V	
+12 (V)	11.93 V	
+1.05 (V)	1.03 V	
+1.5 (V)	1.54 V	
+5 (V)	5.07 V	
+3.3 (V)	3.32 V	
VBAT (V)	3.05 V	
3.3VSB (V)	3.32 V	
** Smart FAN Setting **		
CPU Smart Fan Temp..	[Disabled]	
↑↓→← :Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1: General Help F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults		

☐ Shutdown Temperature

If CPU temperature reaches the setting value will automatic shutdown system.

☐ CPU Warning Temperature

If CPU temperature reaches the setting value will beep in DOS mode.

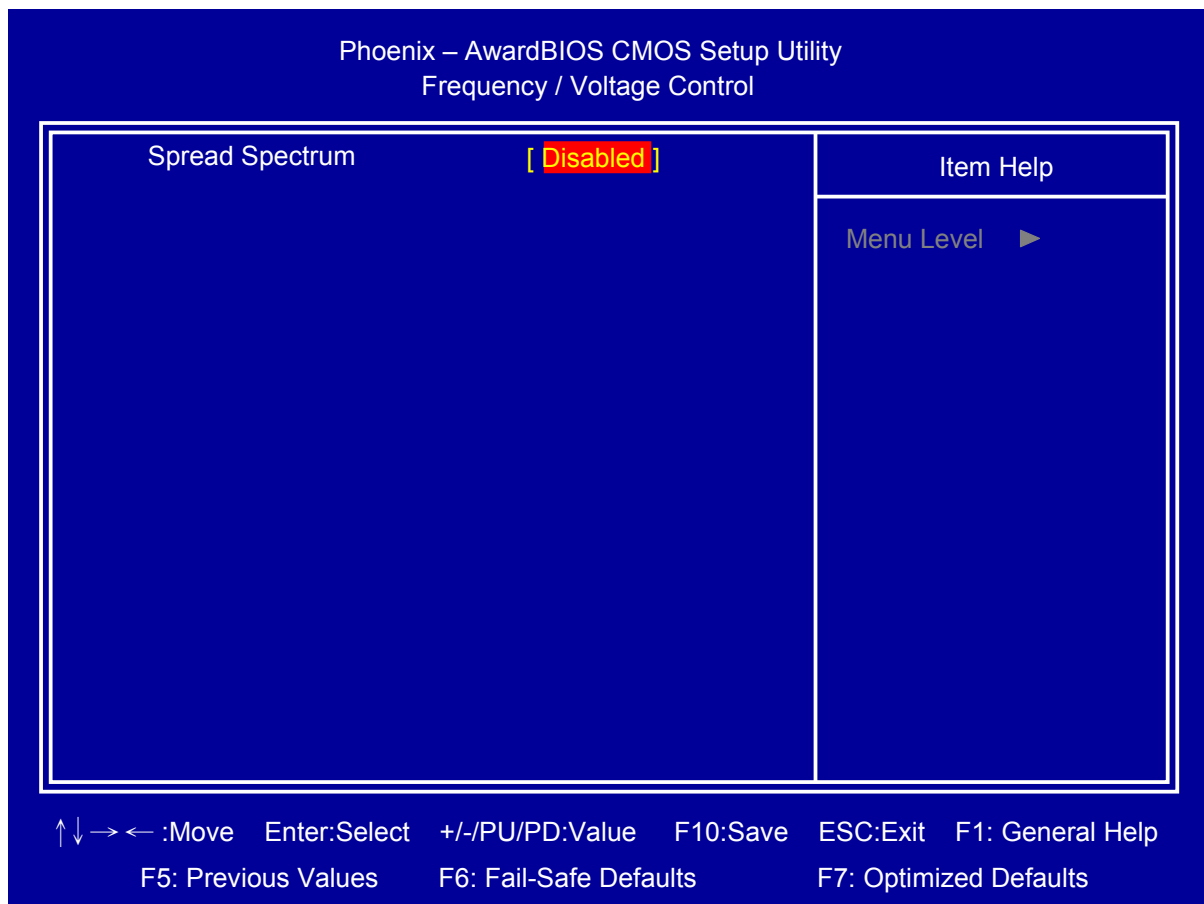
☐ CPU Smart Fan Temperature

Setup CPU Smart FAN temperature.

☐ System Smart Fan Temp.

Setup System Smart FAN temperature.

3.9 Frequency/Voltage Control



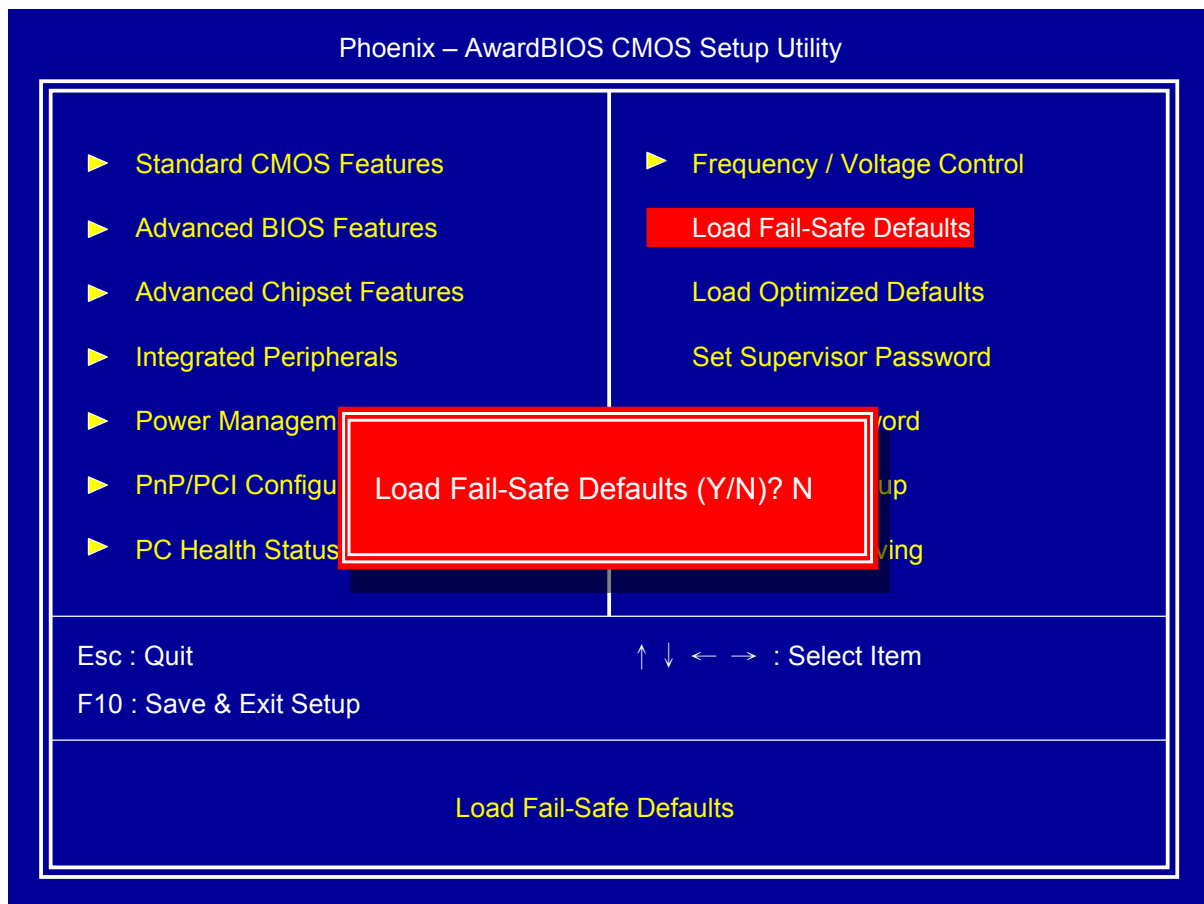
☐ **Auto Detect PCI Clk**

Select "Auto Detect PCI Clk" Enabled/Disabled

☐ **Spread Spectrum**

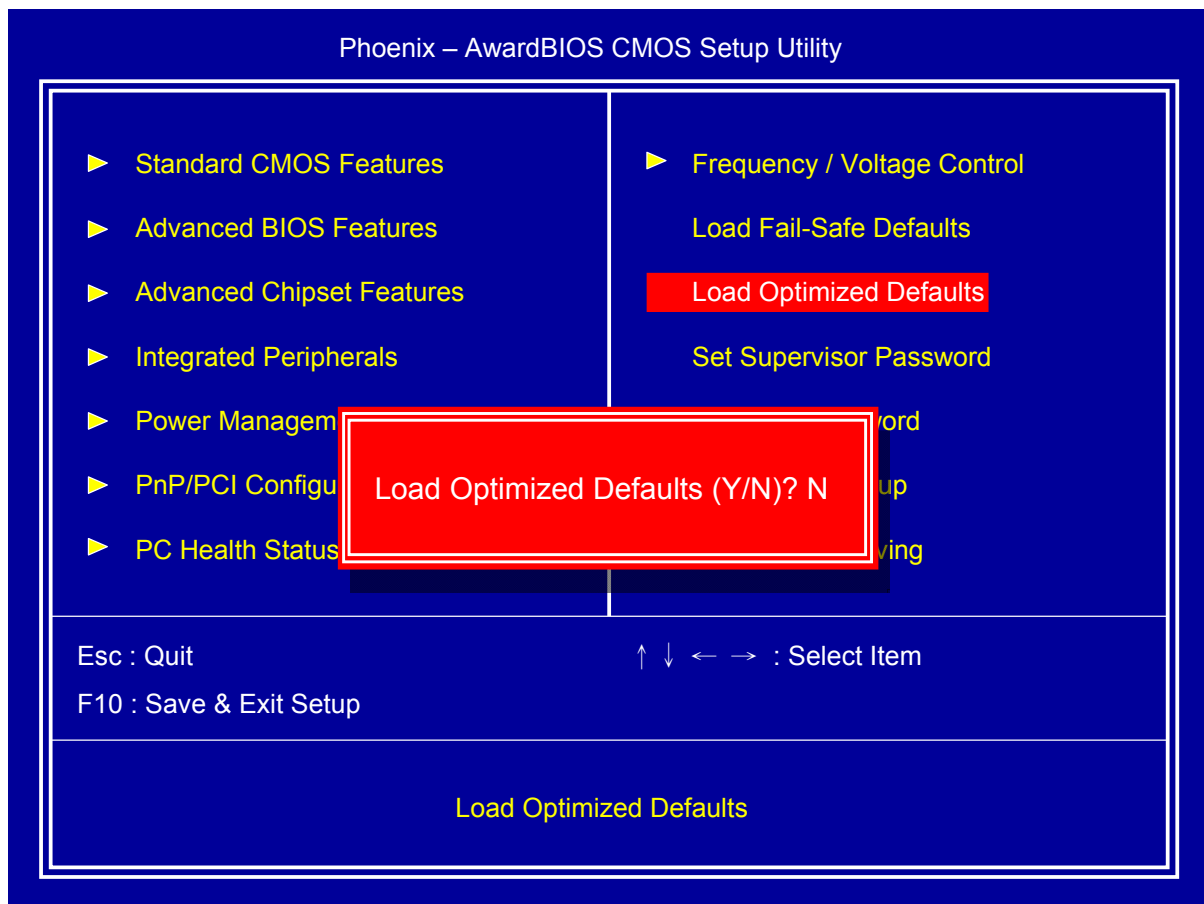
Select "Spread Spectrum" Enabled/Disabled.

3.10 Load Fail-Safe Defaults



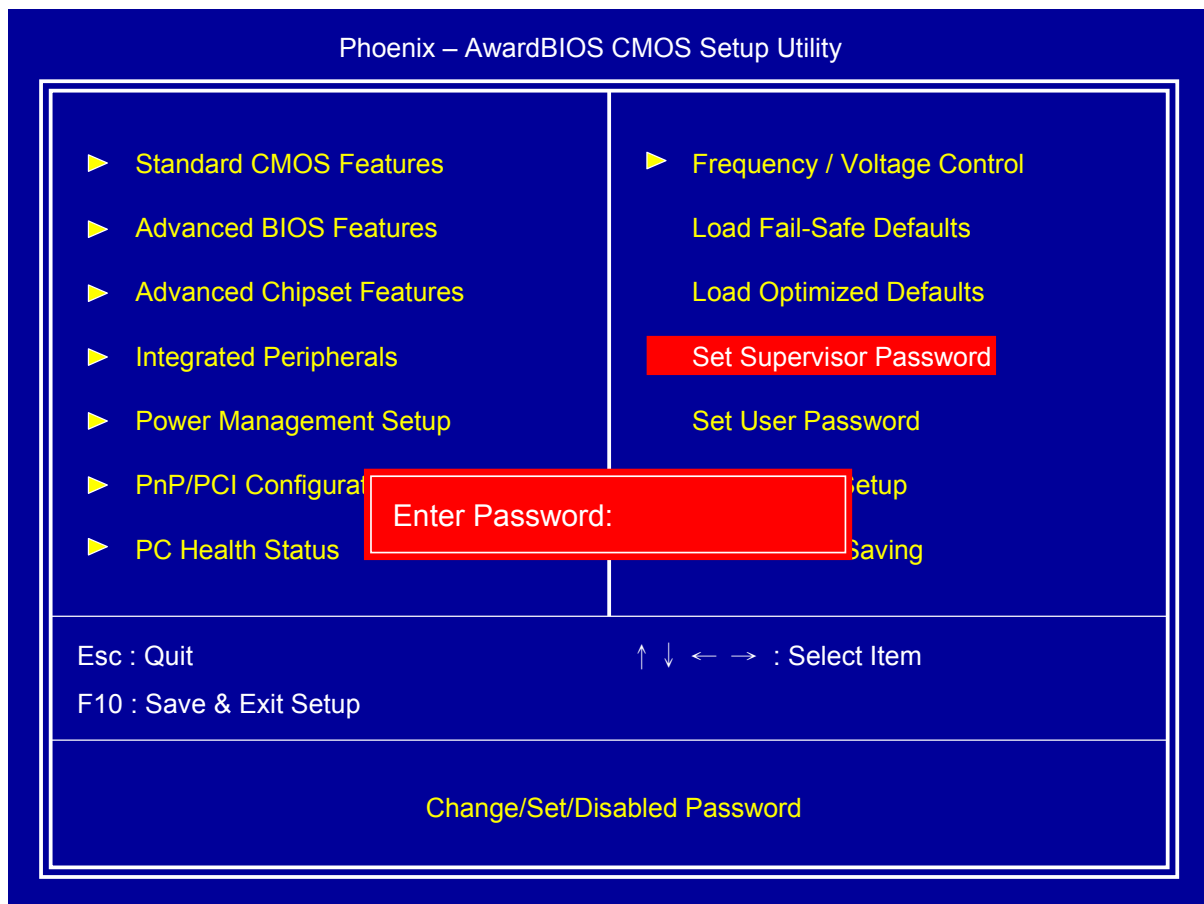
This item will set configuration for non optimized system operation.

3.11 Load Optimized Defaults



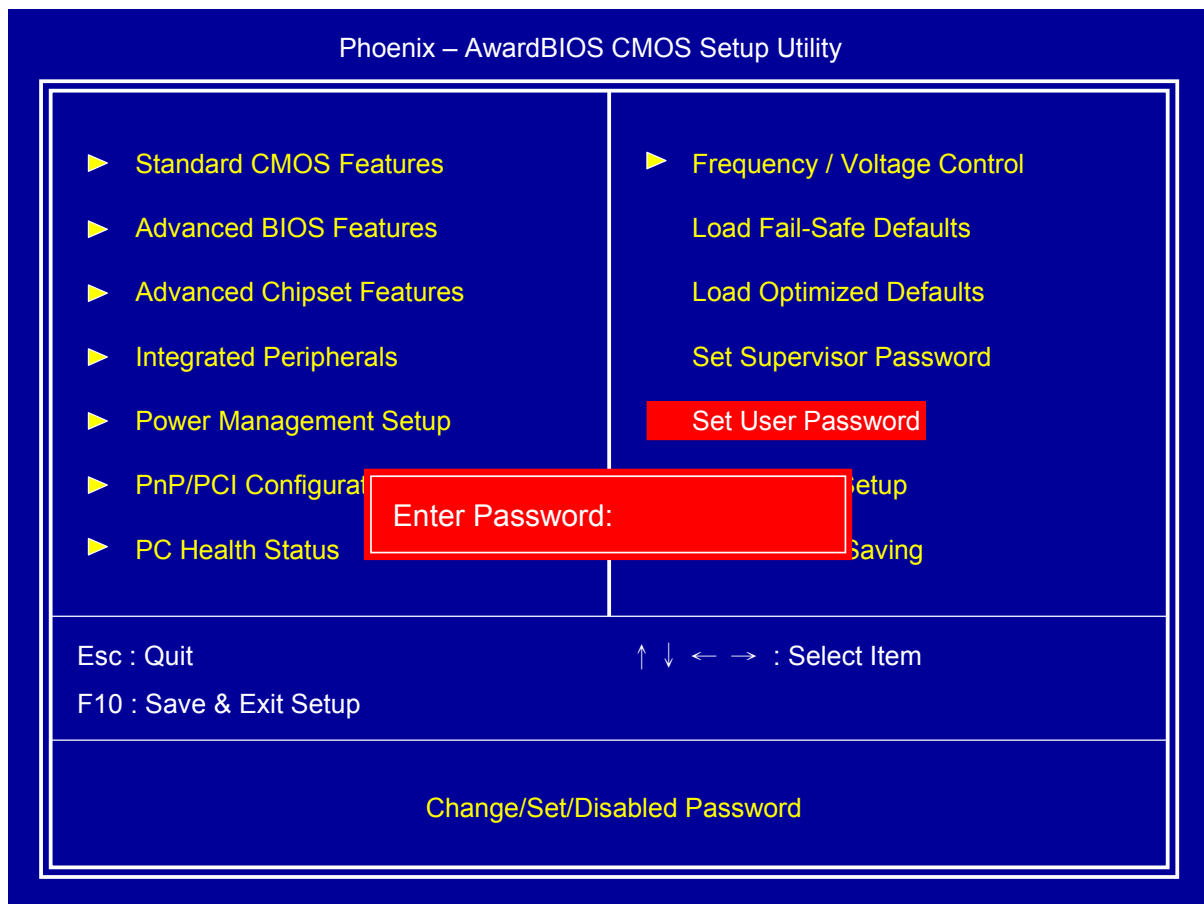
This item will restore factory default setting for optimized system operation.

3.12 Set Supervisor Password



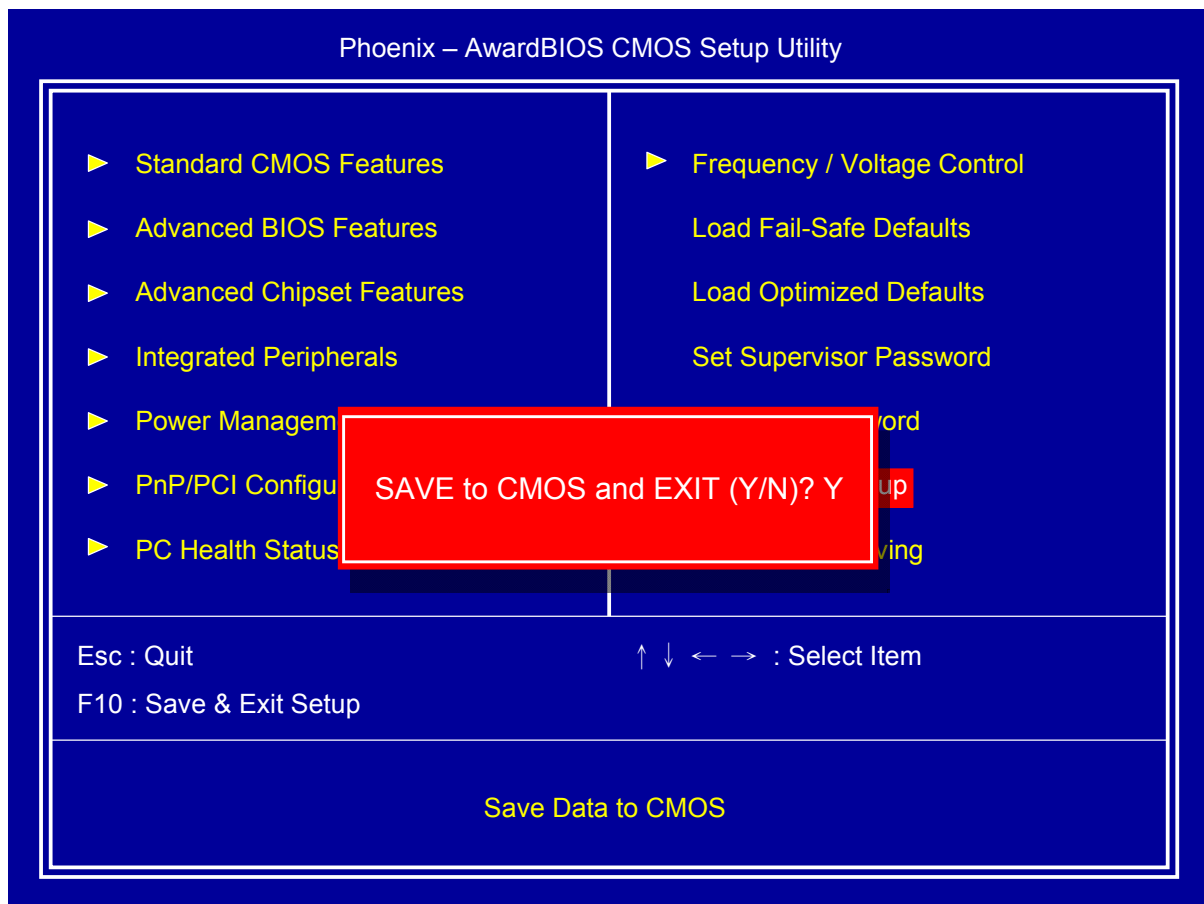
If set supervisor password, it will request typing password to enter BIOS setup utility.

3.13 Set User Password



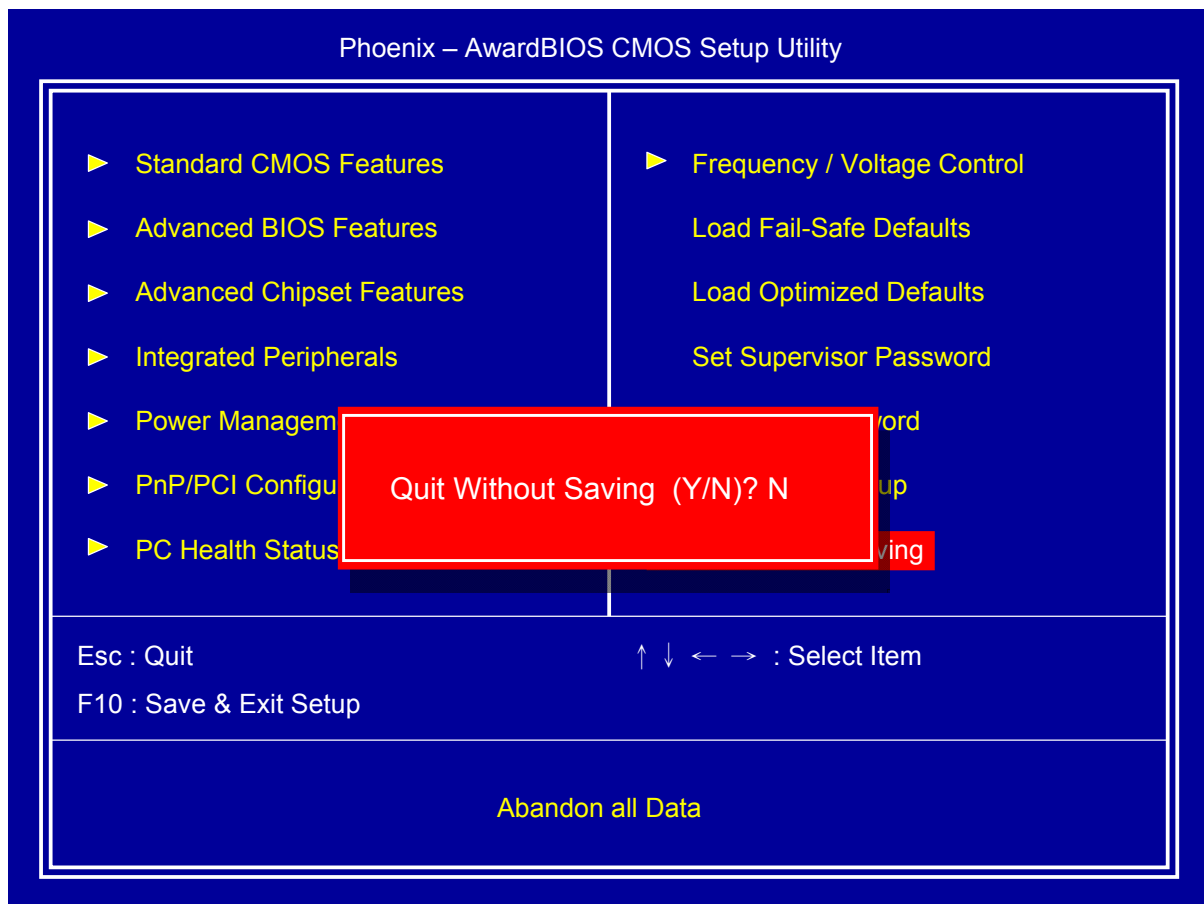
If set user password will request typing password to enter BIOS setup utility, and does not allow modifying configuration.

3.14 Save & Exit Setup



This item confirm save configuration or not before exit BIOS setup utility,
Press <Y> and <Enter> to save configuration, then reboot system.
Press <N> and <Enter> will back to BIOS setup utility.

3.15 Exit Without Saving



This item confirm save configuration or not before quit BIOS setup utility, Press <Y> and <Enter> will not save configuration, then reboot system. Press <N> and <Enter> will back to BIOS setup utility.

Chapter 4 Drivers Installation

This chapter introduces driver installation information.

Please insert the utility CD to CD-ROM drive, the install menu will appear automatically, if the install menu does not list suitable driver of Operate System or appear automatically, please select corresponding driver of utility CD to install.

The Windows XP driver installation steps are as below.

4.1 Intel Chipset Device Software

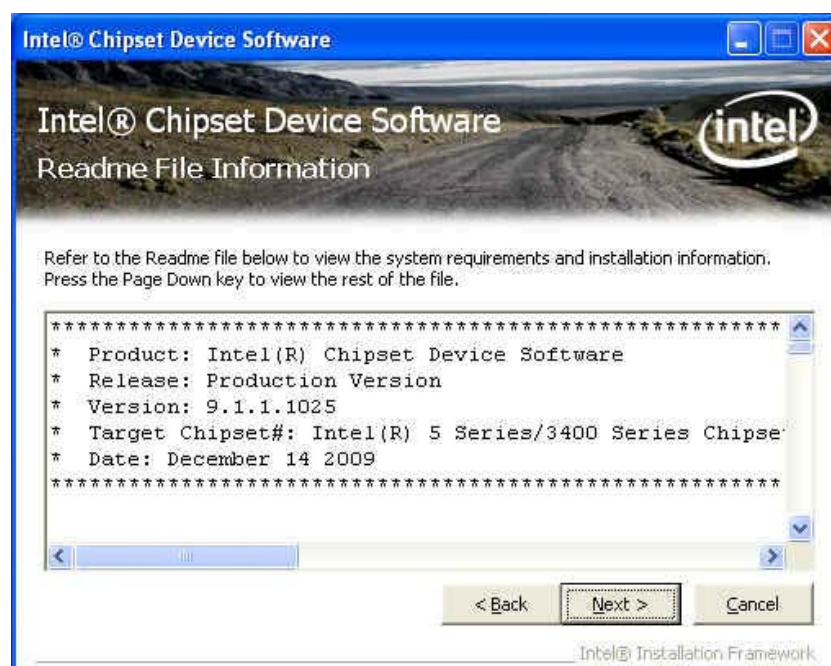
Step 1. Click “Next” to continue.



Step 2. Read the License Agreement and click “Yes” to continue.



Step 3. Click “Next” to continue.



Step 4. Click “Finish” to complete setup.

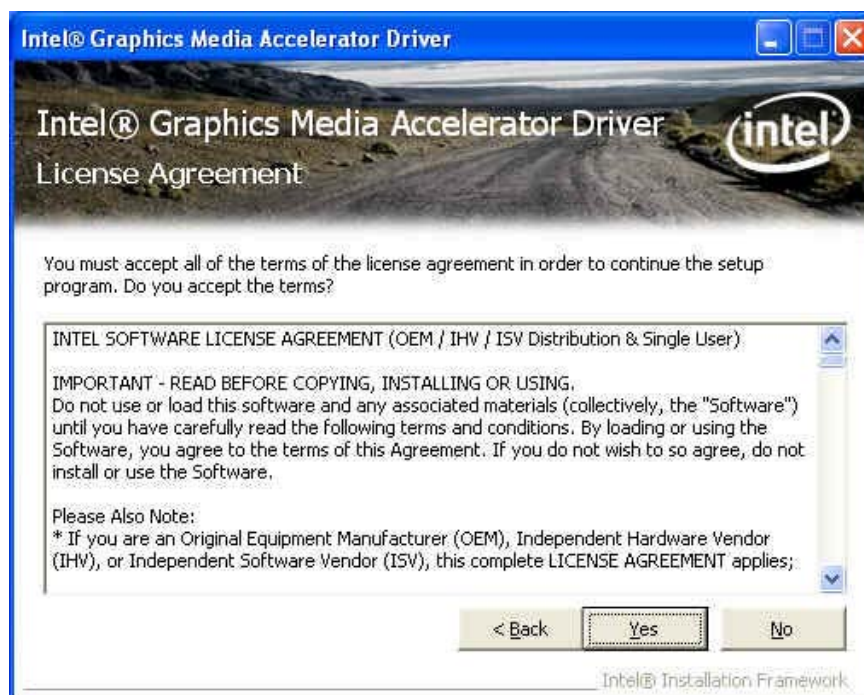


4.2 Intel Graphic Media Accelerator Driver

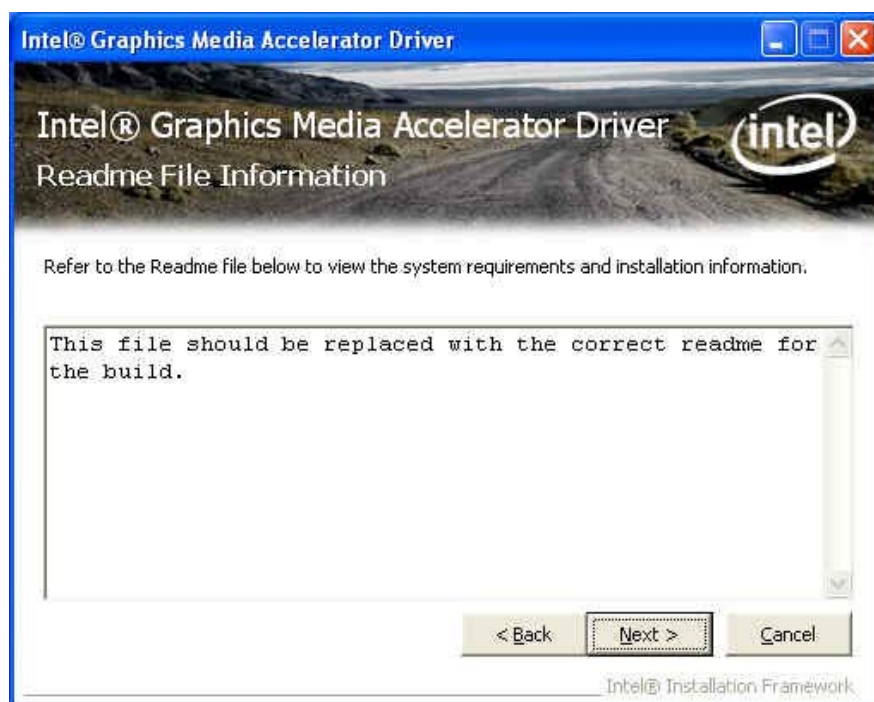
Step 1. Click “Next” to continue.



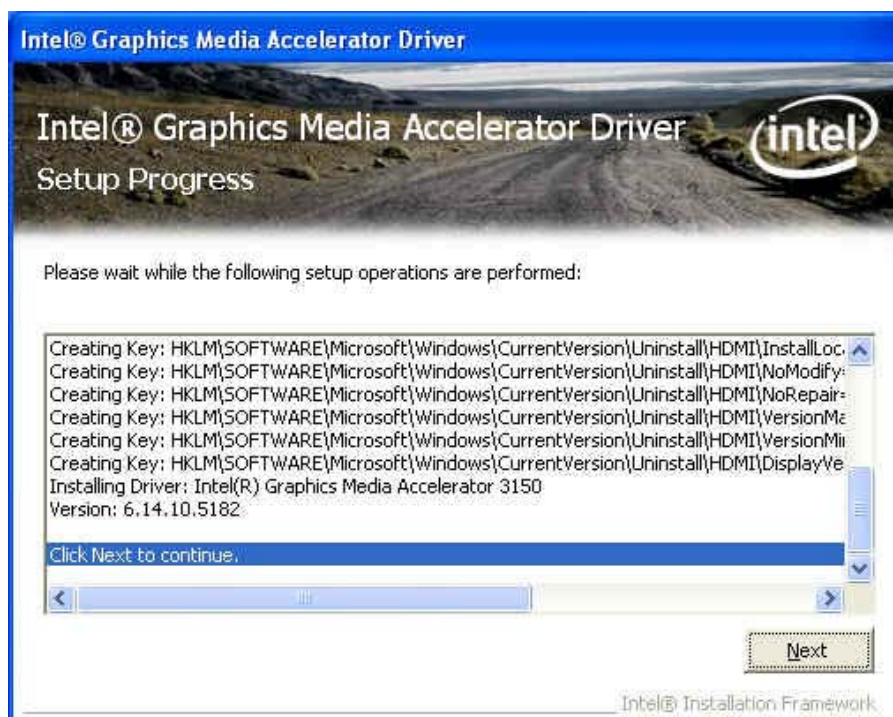
Step 2. Read License Agreement and click “Yes” to continue.



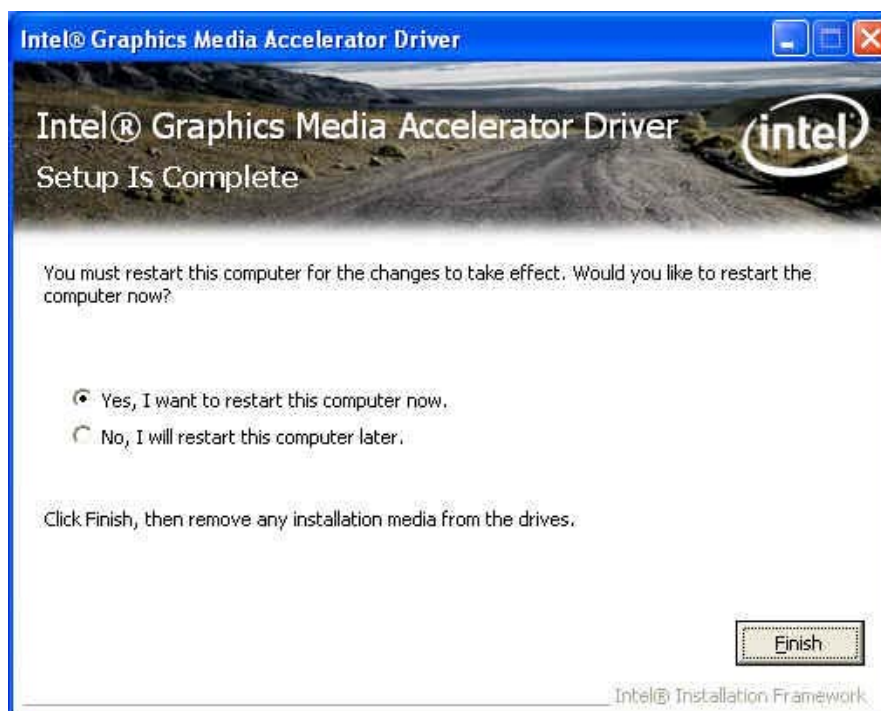
Step 3. Click “Next” to continue.



Step 4. Click “Next” to continue.

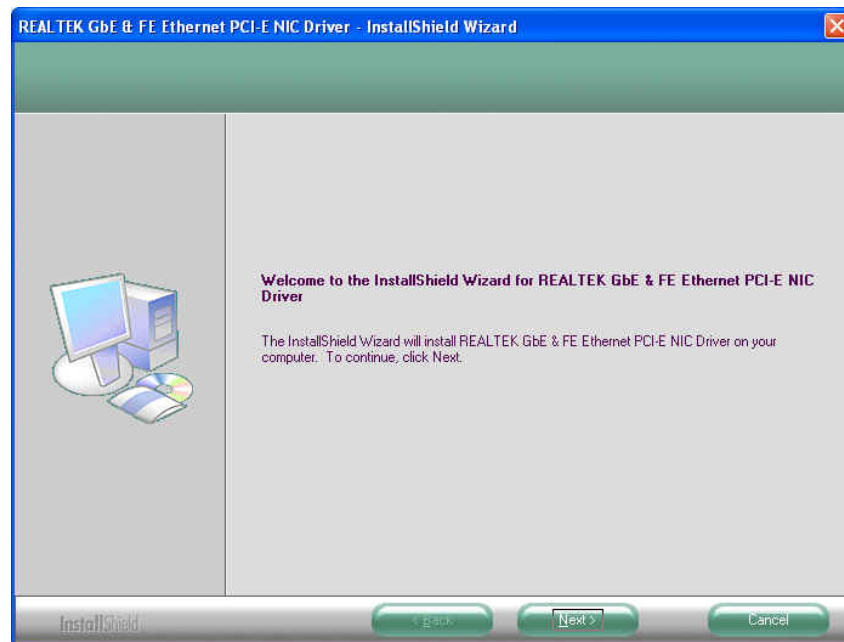


Step 5. Click “Finish” to complete setup.

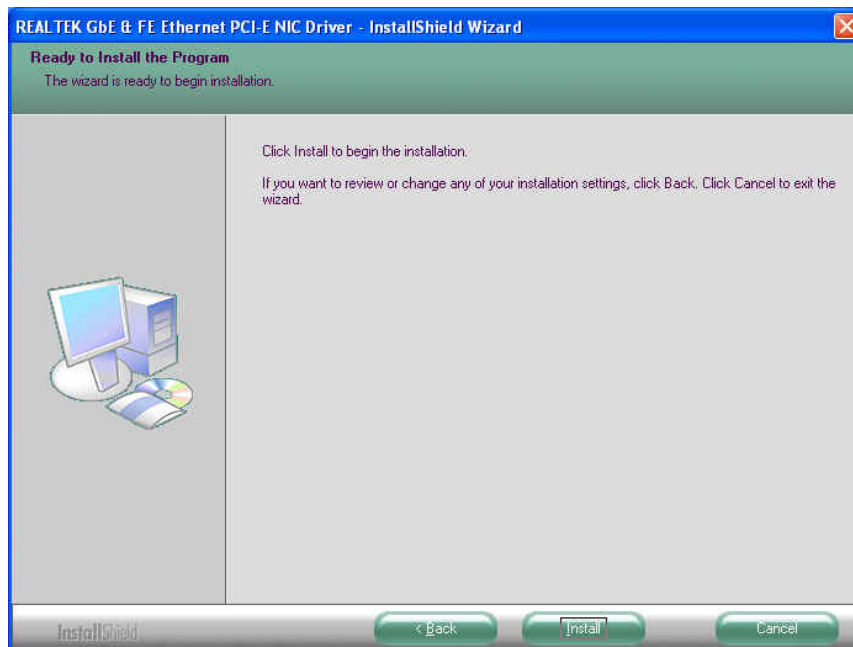


4.3 LAN Driver

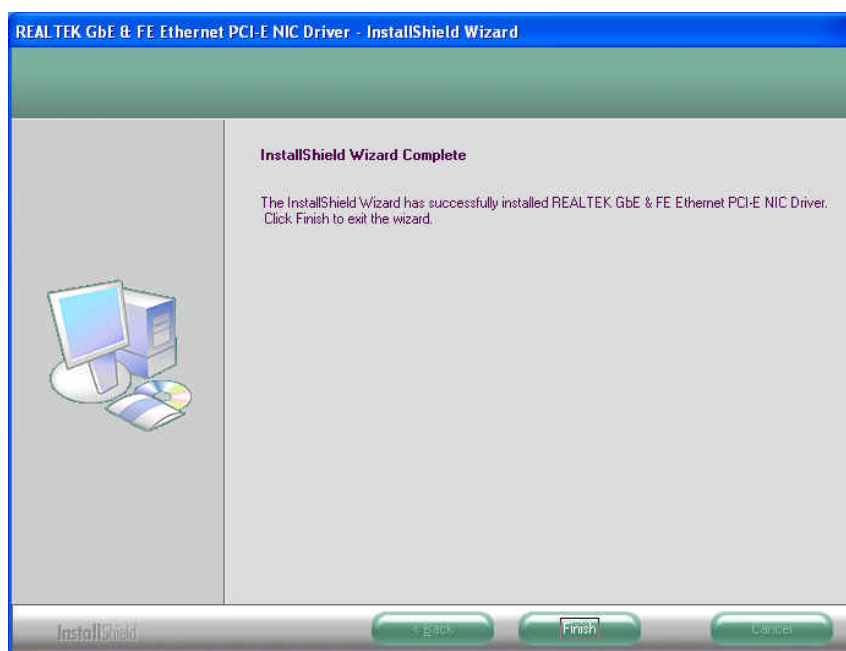
Step 1. Click “Next” to continue.



Step 2. Click “Install” to continue.

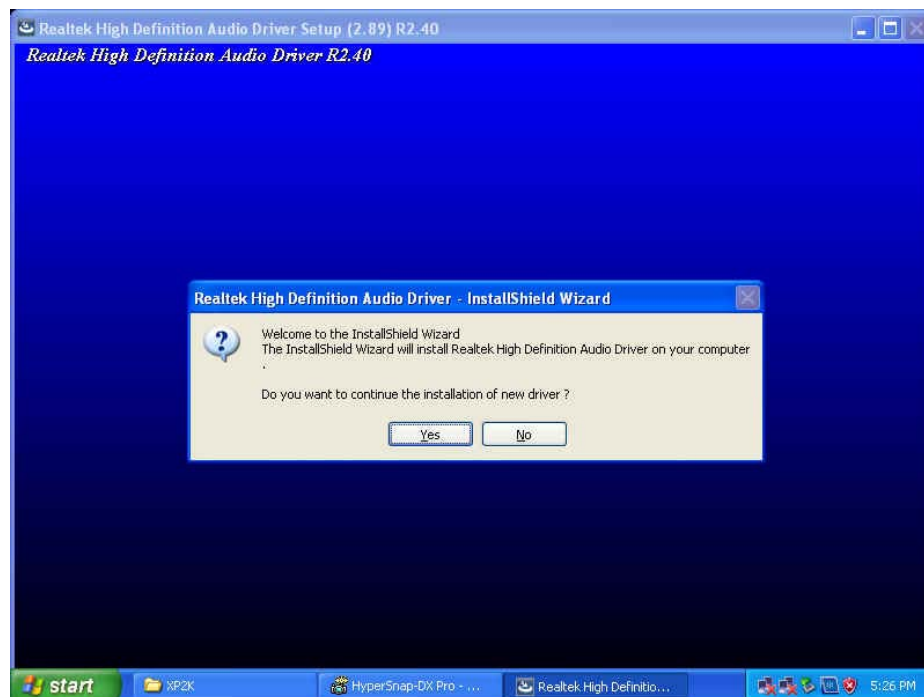


Step 3. Click “Finish” to complete setup.

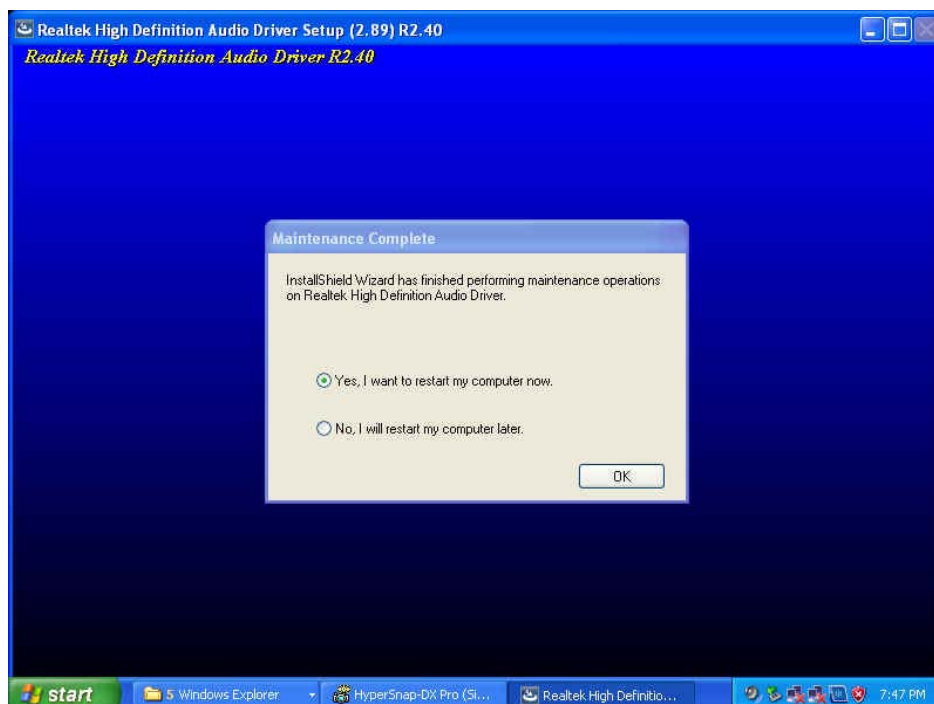


4.4 Audio Driver

Step 1. Read License Agreement and click “Yes” to continue.



Step 2. Click “ok” to complete setup.



Appendix-A Watchdog

The working algorithm of WDT function can be simply described as a counting process. The Time-Out Interval can be set through software programming. The availability of the time-out interval set by software.

The System Board allows users control WDT through dynamic software programming. The WDT starts counting when it is activated. It sends out a signal to system reset, when time-out interval ends. To prevent the time-out interval from running out, a re-trigger signal will need to be sent before the counting reaches its end. This action will restart the counting process.

WDT program should keep the counting process running under normal condition. WDT should never generate a system reset unless the system runs into troubles.

The related Control Registers of WDT are all included in the following sample program that is written in C language. User can fill a non-zero value into the Time-out Value Register to enable/refresh WDT. System will be reset after the Time-out Value to be counted down to zero. Or user can directly fill a zero value into Time-out Value Register to disable WDT immediately.

To ensure a successful accessing to the content of desired Control Register, the sequence of following program codes should be step-by-step run again when each register is accessed.

For more information about WDT, please refer to Winbond W83627EHF data sheet.

There are two PnP I/O port addresses that can be used to configure WDT,

- 1) 0x2E:EFIR (Extended Function Index Register, for identifying CR index number)
- 2) 0x2F:EFDR (Extended Function Data Register, for accessing desired CR)

Below are some example codes, which demonstrate the use of WDT.

```

// Enter Extended Function Mode
outp(0x002E, 0x87);
outp(0x002E, 0x87);

// Assign Pin 77 to be a WDTO# Signal
outp(0x002E, 0x2D);
outp(0x002F, inp(0x002F) & 0xFE);

// Select Logic Device 8
outp(0x002E, 0x07);
outp(0x002F, 0x08);

// Active Logic Device 8
outp(0x002E, 0x30);
outp(0x002F, 0x01);

//Clear WDTO# Status
outp(0x002E, 0xF7);
outp(0x002F, inp(0x002F) & 0xEF);

// Select Count Mode (Second / Minute)
outp(0x002E, 0xF5);
outp(0x002F, (inp(0x002F) & 0xF7) | (Count-mode Register & 0x08));

// Set Time-out Value
outp(0x002E, 0xF6);
outp(0x002F, Time-out Value Register);

// Exit Extended Function Mode
outp(0x002E, 0xAA);

```

Definitions of Variables:

- Value of Count-mode Register:
- 1) 0x00 -- Count down in seconds (Bit3=0)
 - 2) 0x08 -- Count down in minutes (Bit3=1)
- Value of Time-out Value Register:
- 1) 0x00 -- Time-out Disable
 - 2) 0x01~0xFF -- Value for counting down

Appendix-B GPIO

The System Board provides 4 dedicated output ports and 4 programmable I/O ports that can be individually configured to perform a simple I/O function. Users can configure 4 programmable I/O ports to become an input or output port by programming register bit of I/O Selection .*To invert port value, the setting of Inversion Register has to be made*^(Note). Port values can be set to read or write through Data Register.

Note : Only 4 programmable I/O ports support.

Additionally, 4 Digital Output ports amplified signals from GPIO ports. There are open-drain buffers, which can offer greater driving capacity up to 100mA.

For more information about GPIO, please refer to Winbond W83627EHF data sheet.

The related Control Registers of GPIO are all included in the following sample program that is written in C language. To ensure a successful accessing to the content of desired Control Register, the sequence of following program codes should be step-by-step run again when each register is accessed.

There are two PnP I/O port addresses that can be used to configure GPIO ports,

- 1) 0x2E - EFER (Extended Function Enable Register, for entering Extended Function Mode)
 - EFIR (Extended Function Index Register, for identifying CR index number)
- 2) 0x2F - EFDR (Extended Function Data Register, for accessing desired CR)

Below are some example codes, which demonstrate the use of GPIOs.

```
// Enter Extended Function Mode
outp(0x002E, 0x87);
outp(0x002E, 0x87);

// Assign Pin121-128 to be GPIO port
outp(0x002E, 0x29);
outp(0x002F, inp(0x002F) | 0x01);
```

```

// Select Logic Device 7
outp(0x002E, 0x07);
outp(0x002F, 0x07);

// Active Logic Device 7
outp(0x002E, 0x30);
outp(0x002F, 0x01);

// Select Inversion Mode
outp(0x002E, 0xF2);
outp(0x002F, (inp(0x002F) & 0x3C) | ((Inversion Register) & 0xC3));

// Select I/O Mode
outp(0x002E, 0xF0);
outp(0x002F, (inp(0x002F) & 0x3C) | ((I/O Selection Register) & 0xC3));

// Access GPIO ports
outp(0x002E, 0xF1);
outp(0x002F, (inp(0x002F) & 0x3C) | ((Output Data) & 0xC3));
or
Input Data = inp(0x002F);

// Exit Extended Function Mode
outp(0x002E, 0xAA);

```

Definitions of Variables:

Each bit in the lower nibble of each Register represents the setting of a GPIO port.

Super IO Pin	Bit	GPIO DIO
128	0	GPIO DIO-Out0
127	1	GPIO DIO-Out1
126	2	GPIO DIO-In0
125	3	GPIO DIO-In1
124	4	GPIO DIO-In2
123	5	GPIO DIO-In3
122	6	GPIO DIO-Out2
121	7	GPIO DIO-Out3

Value of **Inversion Register**:

When set to a '1', the incoming/outgoing port value is inverted.

When set to a '0', the incoming/outgoing port value is the same as in Data Register.

Value of **I/O Selection Register**:

When set to a '1', respective GPIO port is programmed as an input port.

When set to a '0', respective GPIO port is programmed as an output port.

Value of **Output Data** / **Input Data**:

If a port is assigned to be an output port, then its respective bit can be read/written.

If a port is assigned to be an input port, then its respective bit can be read only.

Note :

DIO_IN0/DIO_IN1/DIO_IN2/DIO_IN3 are programmed as **Inputs** by BIOS default.

Parameter	Conditions
VinH	min +1.857V
VinL	max +0.525V
Rated Vin	-8V ~ +12V
NC Status	High by Default

**** Attention :** If **DIO_IN0/DIO_IN1/DIO_IN2/DIO_IN3** are programmed as **Output signal**, they can only offer a normal signal transfer.(NOT amplified signals.)

Parameter	Conditions
Vouth	3.3V thru 10k
VoutL	0V thru 1k

DIO_OUT0/DIO_OUT1/DIO_OUT2/DIO_OUT3 are fixed as **Outputs** by BIOS.

Parameter	Conditions
Open-drain buffer	Power-on default = Open
Driving Capacity	max 100mA continue